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In This Issue

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The Week at a Glance

ACTIONS SPEAK LOUDER: Certain spokesmen for industry (as an editorial this week points out) have expressed themselves fluently and forcefully against many of the economic and political evils inherent in the totalitarian systems, while at the same time silently permitting prominent groups among their own supporters to advocate, and use, in the fields of their own selfish interests, precisely the coercive practices which the avowed enemies of individual political freedom would employ generally to achieve their purposes. As long as business does not practice those principles—self-reliance and self-support—to which it pays such regularly proclaimed lip service, is it likely to succeed in enlisting in such causes the farmers and the unions whose help is essential if they are to prevail?

WALLACE MYSTERY: Why is it that most editorial writers and reporters, when they justly criticize Henry Wallace's economic and political acts and opinions, usually preface their objections by some reference to his "sincerity" or "integrity"? The great religions in which this man professes to have steeped himself have as central doctrine such commandments as "Thou shalt not bear false witness"; yet who else among public men has been so generous as he in the cruel and careless derogation of earnest, honest and competent business management, including that of the railroads? On the possibility that he might really believe what he says, can ignorance of palpable facts be lightly excused in one with his pretensions to and opportunities for authoritative knowledge?

ANTI-WALLACE MYSTERY: To temper the encouragement to which the current chorus of alarms over the prospect of his rule of the government's stupendous lending agencies might give rise is the disconcerting fact that the sounders thereof were able, for the most part, to preserve a reasonable facsimile of equanimity through the four years of his Vice-Presidency, when he was only one step removed from full mastery, not only of these agencies, but of the entire federal administrative and dictatorial machinery. Is it possible that at last an unmistakable whiff is emanating from that charnel-house where the master planners have laid down cold marble slabs for the repose of lost economic and political liberties?

"ON THE JOB" DAVID: Despite the fact that the Honorable A. F. Whitney—who fairly trod on the President's heels following his leadership last year when the brothers' wage raises were tangled up by Stabilizer Vinson—is "agin" the whole program in its present form, F. D. R. has come out in support of the "standard" unions' bigger benefits bills, which would amend the Railroad Retirement Act and the Railroad Unemployment Insurance Act by "liberalizing" their provisions and upping the accompanying tax rates, especially the carriers' share. "Labor" remarks that the

railroad "lobby" is "comparatively silent." It also remarks that David B. Robertson's R. L. E. A. committee is "on the job" in Washington to get the bills through this Congress, and no foolin'. The letters emanating from the White House (as reported in this issue's news columns) lend an aura of credibility to that assertion, at least.

WEATHER WORRIES: This winter Boreas has really unleashed his wrath against a bank of eastern and north central states where trunk rail lines have been carrying capacity loads of vital freight. The result is seen in the O. D. T.'s orders to the A. A. R. to take drastic steps to break up the serious and widespread congestion in traffic and delays to car movements caused by the prolonged severe weather and aggravated by inadequate manpower. As noted in this week's news pages, an embargo was in effect through the week on civilian freight into the area east of Chicago and St. Louis and north of Cincinnati and Washington, and an I. C. C. order authorized the carriers to reroute traffic within that territory to take maximum advantage of available routes.

PROVOCATIVE POLEMICS: With the hope and expectation that readers may be moved to express themselves on the questions brought up, two of our editors this week debate at some length the merits and demerits, as they see them from their respective viewpoints, of the proposed centralized technological research organization of the railroad industry which would be set up under A. A. R. auspices. So long as the industry itself is of two minds about the desirability of such an undertaking—and the discussion indicates that unanimity of feeling hasn't been arrived at, by any means—then it seems to be desirable to define the issues, to dispose of misconceptions, to clarify the relationships between the proposed undertaking and the activities already performed by A. A. R. technical divisions, and to reach some understanding about what ought to be expected of centralized research. The dialogic discussion appears on page 231.

SPEEDY PLATFORM WORK: A description of the public address system installed in the Illinois Central's outbound freight house in Chicago begins on page 234. The purpose of this equipment is to give the general foreman and his assistants a labor-saving and time-saving means of communication with checkers, tractor operators, and freight handlers in this intensively-utilized loading station.

C. T. C. ON THE S. P.: What centralized traffic control is doing to save train time and facilitate the handling of an unprecedented volume of traffic on a 72-mile stretch of single-track main line of the Southern Pacific is related in an illustrated article on page 236. The territory involved includes long heavy grades where many helper movements are necessary.

REVIVING CONFIDENCE: According to Brig. Gen. Leonard P. Ayres, the C. & O. roads' economist, who is quoted in the news pages herein, the cold-blooded measuring processes of the security markets now reflect a decided renewal of confidence in the ability of the railroads to survive in the post-war period. Such a promising but tardy development follows a rather general expression of confidence in the railroads' reliability and a wider realization of their indispensability in times of stress and all-out national effort. But the markets' current appraisal of the industry's credit standing is only a trend, he indicates, and the trend won't reach maturity until it has been reflected in stock prices as well as in prices of bonds.

ENGINEHOUSE PROTECTION: What the Norfolk & Western has done to protect the important enginehouses on its line from serious damage by fire is the subject of a feature article this week. Even though a building that is essentially of conventional frame construction cannot practicably be made strictly fireproof, it is possible, as this road's experience shows, to retard the spread of fires by the use of asbestos-cement fire curtains, column casings, and similar devices, and thus obtain substantial tangible insurance against serious property damage, not only to the structure itself but to the now almost irreplaceable motive power that such disasters endanger.

MAKING MARKETS: There is fairly general agreement as to what this country will need for its survival and good health in the post-war period—the maximum possible use of its facilities for production and of its employable labor. There is far from general agreement, however, as to how to attain these objectives. As this week's leading editorial points out, a temporary panacea, but one that is very effectively propagandized as a permanently dependable solution of the problem, is government spending. Its effect would be felt through the creation of an artificially stimulated—and therefore temporary—market for the products of industry, just as government spending in time of war, for destructive purposes, has provided a temporary market capable of absorbing the utmost capacity of the nation's productive plant and labor force. The alternative to this artificial and temporary market is a natural—and therefore potentially permanent—market for constructive purposes, one based on competition—on competition of business for customers and on competition of workers for jobs. Since such a natural and economically sound market has to be maintained through the free play of competitive forces, the duty of those who believe in the private enterprise system is to thwart the shrewd publicity campaign of the advocates of unstinted spending by educating themselves and the electorate generally as to the disastrous long-run consequences of a temporary prosperity based on a tax-supported market.

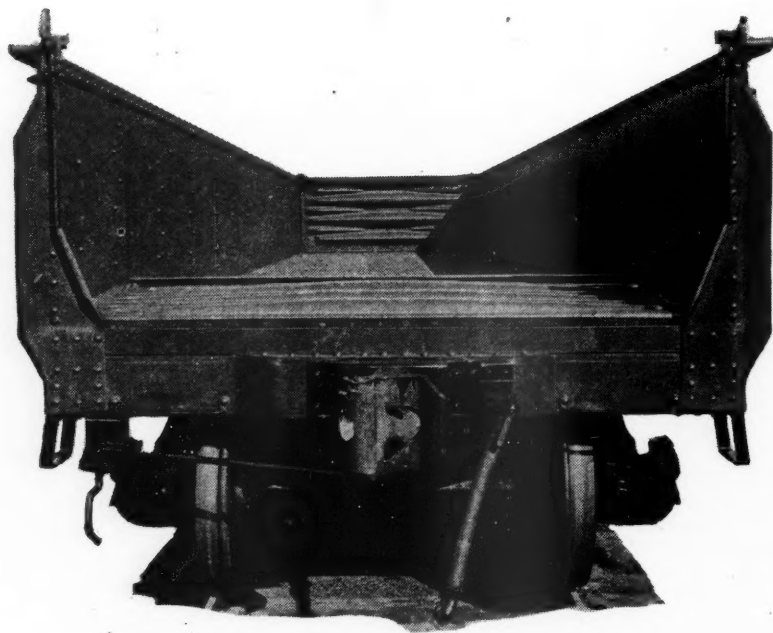
DREADNAUGHT DROP END GATE

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—STRENGTH IS UNIFORM—**

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How Create an Adequate Market?

The current nation-wide propaganda of many public officers, labor leaders and business men for huge government spending to prevent unemployment after the war recalls the propaganda for "free silver" which swept the country 50 years ago. The nation was then in the midst of a period of depression and low prices. Adoption of "free silver"—i. e., coinage of silver at a ratio with gold of 16 to 1—was advocated by the economically illiterate as an indispensable means of causing a rise in prices—i. e., inflation—and restoring prosperity. Its defeat by the advocates of sound money in the political campaign of 1896 prevented national disaster, and was followed by a period of recovery and prosperity that lasted more than thirty years.

Combat Economic Illiteracy

Huge government spending to prevent post-war unemployment is being widely and constantly advocated now by the same kind of economic illiterates in high and low places who advocated "free silver"; and it will cause a worse national disaster than "free silver" would have caused unless it is prevented by an effective nation-wide campaign of education such as defeated free silver. Business men must educate themselves and spare no necessary effort or expenditure to show the public why continued huge government spending would lead to disaster and by what means adequate employment can and must be provided without it.

Under the conditions that existed in the United States before the war, and that will exist here after the war, whether adequate *useful* employment will be provided will depend upon whether we solve the crucial problem of *creating a market for all that can be usefully produced and distributed*. This economic fact cannot be too often or too strongly emphasized. For, that the required total market must be *created*, and *how* to create it, are disregarded and evidently unknown by most of those who demand and promise "full employment." The needs and desires of the people of this and other countries provide an unlimited *potential* market for American products. But this *potential* market existed throughout the decade of pre-war depression when, because of failure to create an adequate *real* market, an average of almost 9 million of our available labor force were unemployed in spite of unprecedented peace-time government expenditures.

The experience of our own and other nations during the war has demonstrated that it is not difficult *temporarily* to provide "full employment" at high wages. All that is necessary is for government to raise all the money it can by taxing and borrowing, and then spend it for construction, production, transportation and other means of distribution. It is as simple as that. And because it

is that simple many—including some in high places—cannot understand why the provision of "full employment" should be difficult at any time. If business and government combined can provide full employment in time of war, why can they not in time of peace? They can—*temporarily*. Government in time of war, by its taxing, borrowing and spending, *temporarily* creates a huge market for *implements of war*. It can, *by the same means, and temporarily* provide in time of peace an equally large market for anything it sees fit. But it can do so only *temporarily*—i. e., until it bankrupts itself and causes national disaster. The real post-war problem will be—How, without causing national disaster, to create an adequate market for all the kinds of civilian products which the people show they need and desire by themselves buying or desiring to buy them?

Has a total market adequate to absorbing virtually all the *civilian* goods that could be produced, and thereby making possible virtually full employment, ever been created and maintained for a long period in this country? This question is answered by statistics regarding the labor force and employment throughout 43 years (1900-1942, inclusive) which were published in *Railway Age* of December 2, 1944, page 839. These statistics show that in the 30 years 1900-1929, inclusive, employment averaged 97.4 per cent of the available labor force, as estimated by census methods; that it averaged 104.7 per cent in the three years ending June, 1919, when it was affected by expenditures for war; and that it averaged 96.7 per cent, and was never less than 90 per cent, in the other 27 years, when there were no government expenditures for war or expressly to provide employment.

Revive Pre-War Competition

By what means was created and maintained the market which during those 27 years made it possible to provide virtually full employment? It was created and maintained by *competition*. Prices and wages fixed by monopoly practices of business and labor unions often restricted the total market for goods and total employment. But prices and rates, excepting in government-regulated industries, usually were fixed by business competition for *customers*. Wages usually were fixed by competition of employers for workers and by competition of workers for jobs. And this competition created a total market sufficient to provide virtually full employment by keeping the *relations* between the wages and prices of different industries such that each industry and its employees could exchange virtually all they could produce for the products of other industries and their employees.

The current nation-wide propaganda for huge govern-

ment spending shows that those who advocate it are afraid or unwilling to rely upon competition to provide in future a large and expanding market and virtually full employment. But why? In spite of the great increase of government spending in the decade before the war, unemployment during that decade averaged almost nine times as great as in the three decades ending with 1929. The Department of Justice, ostensibly to revive competition, is making wholesale attacks in the courts upon business for alleged violations of the anti-trust law. But the plain truth is that the present administration and other advocates of huge government spending do not want the kinds of competition which prevailed before the war revived. For that competition included competition by workers for jobs at wages largely fixed by competition; and the labor unions desire to retain and exercise the power of monopoly in fixing wages. Furthermore, since World War I government spending has caused competition in business, and especially in transportation, to be affected increasingly by subsidies; and business interests and many working people and farmers who believe that they have been and who hope to be benefited by subsidies favor the enlargement of subsidies, in ignorance or disregard of their destructive effects on the free and equal competition required to create an adequate market for civilian goods, and thereby provide adequate employment.

There is agreement that the objectives to be sought are the maximum practicable peace-time production and employment. There is no evidence that they can be attained by any means excepting those by which they have been attained in time of peace in the past.

Clean Air for Passenger Cars

It is difficult or impossible with present material and labor limitations to do much about improving passenger comfort. With passengers sleeping in every seat and even on the floor, however, the need for cleanliness and sanitation becomes acute. Several methods are being used to improve sanitary conditions. Properly controlled heating and cooling, produce equable temperatures, avoid drafts and hold humidity within reasonable limits. Throw-away and oil-type filters remove a large part of the dirt in the make-up and recirculated air and recent improvements have greatly improved their efficiency. Fresh air may be brought into the car in amounts limited by heating and cooling capacities, or the capacity of ventilating fans and ducts.

The best car ventilation, however, is of necessity far below that recommended for schoolrooms and public buildings and not enough to eliminate odors and possible effects of air-borne bacteria. This has led to many attempts to improve air quality. Among the first of these was the introduction of so-called deodorants which did nothing but introduce another odor which it was hoped would mask the one already in the car. Usually the passenger could smell both and in addition he suffered irritation of nasal membranes. More recently developed deodorants dispose of odors, but some of them are suspected of containing certain essential oils which temporarily desensitize the olfactory nerve and render the passenger unaware of disagreeable

odors. Perhaps this is permissible, but it scarcely seems like the best method. Other inexpensive deodorants apparently do what they are supposed to do.

A highly effective means of disposing of odors is the use of activated carbon, but its higher cost causes the railroads to continue experiments with deodorants and other means. Ozone has produced good results, but the amount must conform rather closely with a changing passenger load and some difficulty has been experienced in holding the required balance and in assuring continuous operation of the vibrating power supply units. These difficulties do not appear to be insurmountable.

The electrostatic air filters which have been tried do not assume to be deodorants, but they hold much promise since they will trap ninety per cent of all dust going into the filters, including even such finely divided particles as tobacco smoke.

Another form of purifier which has been used to a limited extent is the germicidal or bactericidal lamp. It is essentially a fluorescent lamp containing no fluorescent powder, made of a special glass which will pass the desired wave length of ultraviolet light (2537A) generated by the mercury arc in the tube. It effectively destroys air-borne bacteria which transmit respiratory diseases and its use, particularly in places where ventilation is inadequate, is growing rapidly. In well-ventilated schoolrooms, in which the addition of germicidal lamps has been found highly beneficial, there may be six changes of air per hour; in few cars is there more than half this amount. The lamps are said to be equal in their germicidal effect to 100 changes of air per hour. Contamination is a product of bacteria concentration and time, and accordingly there is relatively little need for such provision on suburban trains. The units are most effective in large spaces where the light may travel through the air for some distance, but in a car there is so little headroom (the lights must be placed high enough so they can not be seen) that their placement in ducts is about equally effective.

At the moment many of these things may seem like unwarranted refinements, but some of them could be used effectively right now to improve conditions in crowded cars. Their use in public buildings and in homes will probably increase to the point that a railroad which does not make adequate use of them will be subject to criticism.

Evil, Hated in the Abstract, Embraced in the Concrete

Businessmen as well as governments are making plans for the demobilization of almost everything in the post-war world but government itself. Every group has got its teeth in some piece of the war-time structure of Statism which it wants to keep for itself in the post-war world, whatever happens to the rest.

—President Virgil Jordan of the National Industrial Conference Board in the Board's Publication, "American Affairs"

Dr. Jordan has aroused the well-merited and enthusiastic admiration of leaders of all varieties of business by the acute insight into the moral and economic follies of contemporary life to which he gives felicitous expres-

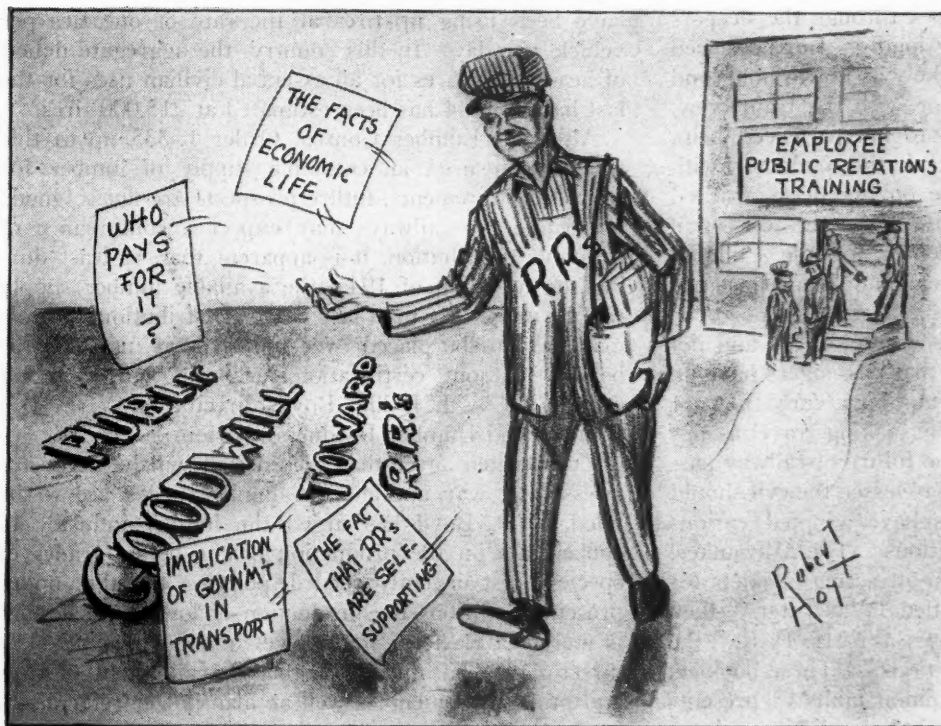
sion in the jeremiads he delivers at the bi-monthly meetings of the Conference Board. Like most popular preachers, however, he appears to arouse the zeal of his hearers against economic and political evil portrayed in the abstract rather than in the amendment of their concrete behaviour. If he should single out by name industrial groups in his own audience as exemplifying the perpetration of the misdeeds he cites, quite likely he might solve the problem the Conference Board has of finding sufficient space to accommodate all those who wish to attend its sessions.

Consider, for example, the so-called "federal aid principle in highway construction," favored by the American Automobile Association and publicized in a December 20 press release of the National Highway Users Conference, which contains the following provisions:

"A federal-aid policy based on transportation needs and confined to general purpose roads of national significance . . . Federal aid should be a charge against general government revenue and should bear no relation to federal automotive taxes. . . . Repeal of federal automotive taxes."

Here is simon-pure Statism and socialism, put forward by automotive interests, many of the leaders of which are outspoken in their criticism of the enlargement of governmental intervention in any other aspect of the economy. In this so-called "federal-aid principle," they are advocating that all "general purpose roads" be paid for 50-50 by the federal government—and not by charges assessed in connection with the use of roads, but by income taxes, and excise taxes levied on other things that people buy besides motor vehicles, with no necessary relationship between the amount of money the citizens of a given state are assessed and the highway funds allocated to that state.

"A Sower Went Forth to Sow . . ."



But First Somebody Had to Provide Him with the Seed

This "federal-aid principle," in short, invites Statism to come in and—by coercive use of the taxing power backed up by police and courts and jails—force people to buy more highway transportation than they would purchase voluntarily; and, of course, proportionately deprive the people by the amount of such taxes of the opportunity to make purchases of other goods and services which they would prefer.

This is not economic freedom. It is not political freedom. It is just a polite streamlined formula, in a narrow sphere, for the coercive redistribution of wealth which is enforced more generally and more candidly by Nazis and Communists, and advocated by left-wing New Dealers.

Rail Steel

The steel in rails produced today is far superior to that manufactured years ago, and the railways and manufacturers alike are to be commended for the continuous research that has been responsible for this improvement. It would be impossible without it for the railways to handle the war traffic as efficiently and safely as it is being handled.

But the rail problem has not been completely solved, and any tendency for railroad men or manufacturers to believe that it has been is to be regretted, especially in view of the higher train speeds which will undoubtedly be called for after the war. With trains traveling at 120 m. p. h., which may well be expected, the rate of stress change in rail will be nearly instantaneous and, under certain circumstances, especially at low temperatures, heavy impacts may cause injury to the rail head, particularly if heavy loads are supported on small-

diameter wheels. This type of damage can occur regardless of the size of the rail section, because it is not a question of distributing the load, but rather one of the running surface of the rail being able to withstand the stresses produced.

While controlled-cooling and Brunorizing have done much to make present rail steel nearly perfect from the standpoint of freedom from transverse fissures, and while Brunorizing also further improves the grain structure, something more will be required if the rail of the future is to withstand successfully the impacts to which it will be subject. Perhaps the solution of the problem lies in the use of alloy steel rails, if they can be produced at a reasonable price. Several years prior to the war one of the steel companies made an extensive in-

vestigation for one of the larger railways to develop an alloy steel rail. The project was finally dropped because the cost of such rails at that time would have been nearly double the cost of the open-hearth rails. Since then, however, outstanding developments in metallurgy have produced new alloy steels, some of them relatively inexpensive.

Viewed from another standpoint, a practical solution of the problem may lie in special heat treatment to give rail steel the properties needed. With some exceptions, improved physical properties, equivalent to those possible through the use of alloys, can be given rail steel by heat treatment. Such treatment is usually afforded the rails used to support large traveling cranes in industrial plants.

Rails having a fine-grain sorbitic structure in the head, combined with controlled-cooling or Brunorizing to prevent the development of shatter cracks, would undoubtedly afford improved service compared with present rail. Steels of such structure have excellent high-tensile properties, good ductility and toughness. A number of methods have been experimented with to produce such qualities in rail steel, with considerable success. These experiments should be continued and expanded. In the present era of "tailor-made" steels, it is inconceivable that further improved railroad rails should not be made available within a price range which will permit their widespread use.

War Jitters

Loud talk, clatter of baggage trucks and popping off of locomotives around passenger stations are highly annoying to the traveler who has gone to sleep, and war-time conditions have added materially to these noises, both in stations during train stops and on the train itself while it is running.

On crowded trains, people flock through the sleepers at all hours of the night, talking loudly. Inexperienced or careless porters are just as likely as not to hold loud conversations with each other or with the train crew. And the noise is not confined to inexperienced help. Recently, on a transcontinental train the conductor, with the bars of many years' service on his sleeve, barged through an open-section sleeping car in the wee small hours calling loudly and obscenely for the Pullman conductor. In coaches any uproar and disturbance are magnified further.

The view of too many harassed employees—and not a few supervisors—seems to be that passengers have no business on trains in war-time; and apparently they are conducting unofficial rationing by making travel as uncomfortable as possible. For the future of railway passenger travel, however, attempts to lessen the evil should be made, and several railways have adopted various means to ameliorate these conditions. The Milwaukee, for example, has issued attention-attracting booklets for distribution to employees. Entitled "War Jitters," they feature a cartoon character known as "Mr. P. R.," the initials standing for "public relations." These booklets illustrate many of the most common faults of present-day passenger service, and show how to eliminate them. More efforts of this kind should be made.

Less Lumber Available

With lumber requirements far in excess of supply, and with this winter's lumber production substantially lower than normal, the lumber outlook for 1945 presents a rather disconcerting picture. It was just recently that officials of the War Production Board intimated that the gap between lumber supply and demand may be expected to increase. Moreover, representatives of lumber producers at a recent joint meeting with the Lumber division estimated that lumber production from now until mid-March will be substantially below that of last winter. While estimates varied considerably throughout the country, it is anticipated the greatest drop from last winter's level will be in the Pacific Northwest.

Just now, Western pine and the better grades of certain hardwoods are particularly short. According to the W. P. B., a gap of 1,673,000,000 board-feet exists between first quarter 1945 requirements and the total available supply. Of this amount, Western pine is short 177,000,000 board feet, and a shortage of 132,000,000 board-feet exists in No. 1 Common and better grades of eight species of heavy hardwoods.

Man-power shortage, with woodsmen and millmen transferring to other war industries, is the main reason for the decline in production, although the scarcity of truck tires is a secondary factor of no small importance. Weather is always one of the unknown factors and, so far, weather conditions have been less favorable this season than last. Furthermore, there is reason to believe that the full impact of tire shortages has not yet been felt. With many trucks tied up because of the lack of operators and reductions in log production, loggers and millmen have been stripping tires and other parts from their idle trucks to keep other vehicles at work. The seriousness of the tire shortage and its effect on lumber production is emphasized by recent reports that military vehicles on European battlefields have been using up tires at the rate of one tire per vehicle per day. In this country, the aggregate deficit of heavy duty tires for all essential civilian uses for the last half of 1944 has been estimated at 215,000 tires.

Although Lumber Control Order L-335 up to this time has insured an equitable supply of lumber for railway requirements, future prospects are not so good; for, while the railways may expect a continuance of equitable distribution, it is apparent that, at least during the first half of 1945, the available lumber supply will be much less than last year. Distribution controls may have to be placed over lumber that may now be bought without certification, according to a recent declaration by J. Phillip Boyd, director of W. P. B.'s Lumber and Lumber Products division.

Lumbermen agree that such action will be necessary if essential war and civilian lumber needs are to be filled. Mr. Boyd has urged the lumber industry to concentrate on the production of the better grades of species most urgently needed, pointing out that under present conditions the production of low grade lumber is merely a waste of man-power and equipment. The director also has intimated that the allotment of tires and other equipment as well as man-power referrals to lumbermen will be governed to a large extent by consideration of the kind of lumber produced.

Fire Curtains in Ten Enginehouses

Norfolk & Western undertakes extensive program to protect its more important frame structures by installing barriers of asbestos-cement sheets

RECOGNIZING that fires in enginehouses can—and do—result in extensive loss of property, especially if locomotives cannot be removed in time to escape damage or destruction, the Norfolk & Western has undertaken an extensive program of installation of fire-protection systems in its more important enginehouses, which are largely of frame construction. Essentially, the method employed is to divide the structures into sections by the installation of fire curtains of asbestos-cement sheets under the ceilings at intervals of three or four stalls, and to enclose the supporting wood columns under each curtain with the same material for their full height and all other columns to a lesser height. The program contemplates the treatment in this manner of a total of 11 structures, including 10 enginehouses and one passenger-car roundhouse.

A Study Is Made

The fire-protection work in enginehouses on the N. & W. follows closely a somewhat similar program that was undertaken several years ago, to fire-proof all the more important signal towers on this road which were of frame construction.* Like the earlier program, which was undertaken following the destruction by fire of an interlocking tower controlling the switches at an important passenger station on another road, the protection of enginehouses came under consideration subsequent to the occurrence of a costly fire in an important enginehouse on another line—this fire being followed some time later by another disastrous enginehouse fire on the same road.

*The measures employed to fireproof signal towers were described in the *Railway Age* for December 19, 1942, page 492.

Following the first of these fires, the N. & W. undertook a study to determine what could be done to render the 40-stall enginehouse at its Shaffers Crossing engine terminal at Roanoke, Va., more resistant to fire. With the exception of the outer circle wall and two existing intermediate fire walls, which are of brick, this building is of conventional timber construction throughout, embracing a frame roof with a clerestory, which is supported for the most part on timber beams spanning between wood columns placed in radial rows between the engine pits. Fourteen of the stalls are served by a traveling crane with a span of 43 ft., and in this section it was necessary to introduce timber trusses to support the roof. As indicated above, the original construction included two intermediate fire walls, by means of which adjoining sections of the structure were completely separated from each other.

For Localizing Flames

After a careful study of the problem, it was decided that the desired results could be obtained by further sub-dividing the structure by means of fire curtains constructed of asbestos-cement sheets, these to be placed under the roof at every third or fourth row of columns and to extend entirely across the structure, that is, from the inner to the outer circle walls. The plan also contemplated the encasement of the columns at the fire curtains with the same material for their full height and similar treatment of all other columns to a height of 12 ft.

Although the fire curtains would not result in the complete separation of adjoining sections that is achieved by the

existing brick walls, it was reasoned that, in the event of a fire, they would localize the flames and delay their progress sufficiently to give fire-fighting services an opportunity to bring them under control, thereby preventing serious damage to other sections of the enginehouse and to any equipment contained in them.

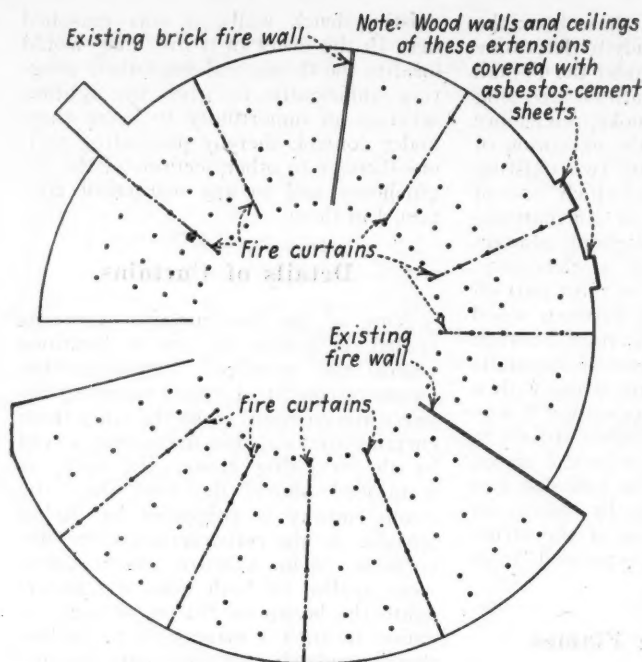
Details of Curtains

Nine of the fire curtains were installed, of which six are at locations where the principal roof-supporting members consist of beams spanning between the columns, while the other three curtains are located in the section served by the traveling crane, and here, as mentioned above, the roof over the crane runway is supported by timber trusses. In the construction of the fire curtains, $\frac{1}{4}$ -in. asbestos-cement sheets were applied on both sides and underneath the beams or trusses at each location in such a manner as to enclose them completely. At the beams, the curtains extend a distance of four feet below the underside of the roof sheathing, with the opening between the side sheets closed at the bottom by a third sheet held in place by two 2-in. by 3-in. nailing strips which are placed inside the curtain at the corners.

Where it traverses the clerestory, each fire curtain fills the entire cross-sectional area of that part of the structure, with its lower edge continuous with the adjacent portions of the curtain. Systems of 2-in. by 4-in. studding were installed in the clerestory areas and in the planes of the trusses for use as furring or nailing strips in fastening the asbestos-cement sheets. In connection with the installation of the curtains, sheets of the



This Fire Curtain in the Enginehouse at Crewe, Va., Is Typical of Those That Have Been Installed in 11 Structures on the Norfolk & Western



Plan of the Shaffers Crossing Enginehouse Showing the Location of the Fire Curtains

fire-resistant material were applied flat against the underside of the roof sheathing at each curtain for a distance of 2 ft. each way from the center line.

Program Undertaken

The wood columns at each fire curtain were entirely encased in the asbestos-cement sheets from a point 5 ft. above the floor to the underside of the curtain. All wood bracing at the top of each post, including the members extending transversely to the curtain, were similarly enclosed. In one section of the enginehouse where 16 of the stalls had recently been extended, the roof-supporting structure included two lines of timber trusses, extending transversely to the rows of supporting columns. At

sions in the outer circle wall, and these were fireproofed by applying asbestos-cement sheets to the walls and ceilings.

Following the installation of the fire curtains in the Shaffers Crossing enginehouse, it was decided to undertake a broad program involving the application of similar treatment to the other more important enginehouses on the system.

To date, such work has been authorized on nine additional enginehouses and one roundhouse for passenger cars, the latter being located at Roanoke. The enginehouses include those at Lambert Point, Va., Shenandoah, Crewe, and Bristol; Bluefield, W. Va., and Williamson; and Columbus, Ohio, and Portsmouth. At the latter point, the company has two enginehouses, both

the locations where the trusses adjoin the fire curtains, the lower chords were encased in the asbestos-cement sheets for 5 ft. each way from the center line of the curtain, and the end posts of the trusses were encased for a corresponding distance. In addition, all other wood columns in the enginehouse were encased to a height of 12 ft. above the floor. To protect the lower parts of the columns from both fire and damage due to blows from trucks or other objects, scrap steel plates were fastened to the columns to a height of 5 ft. above the floor. Incidentally, two of the stalls in this structure have short frame extensions

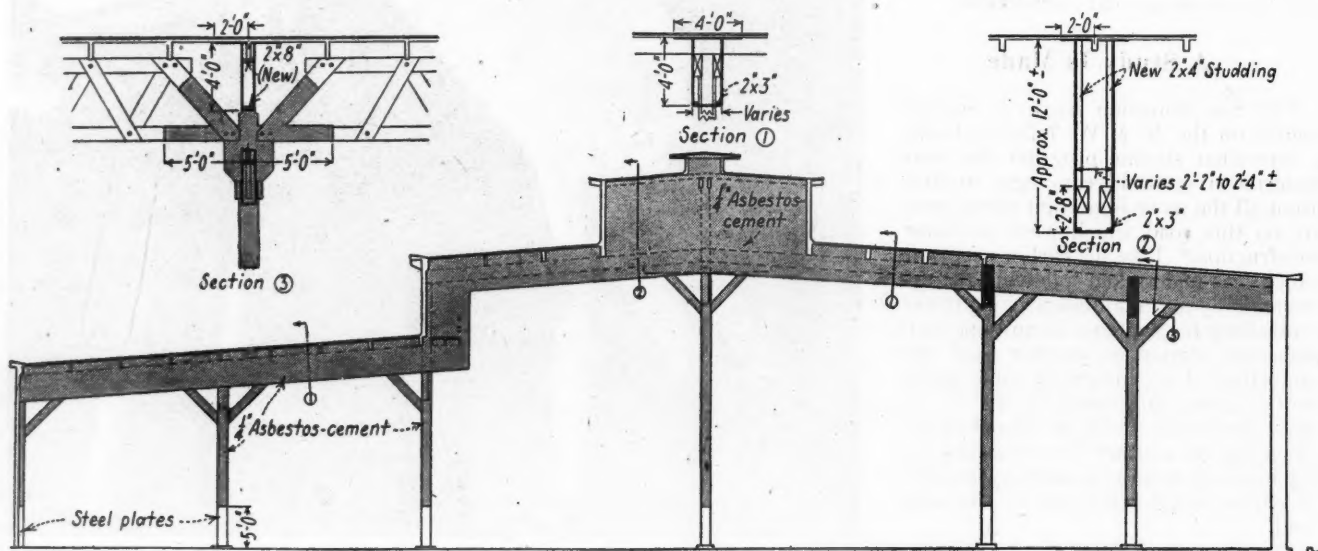
of which were provided with the fire curtains.

Generally speaking, the other enginehouses are similar in construction to that at Roanoke, although the two structures at Portsmouth and the one at Williamson embody a number of variations. For instance, the newest of the two enginehouses at Portsmouth incorporates a high bay in which the roof is supported by steel trusses carried on steel columns, although the low bays are of conventional frame construction and the roof over the steel trusses embodies wood purlins and sheathing. The other enginehouse at Portsmouth is in two sections, one of which is of frame construction throughout, while, in the other, part of the roof was originally supported on steel trusses but subsequently timber members were installed to take the load off the trusses. An adjoining section of this enginehouse is of frame construction.

Supervisors of the Job

In the passenger-car roundhouse at Roanoke, the roof construction consists of timber trusses carried on wood columns. The same general procedure is being employed in these other structures that was followed in treating the Shaffers Crossing enginehouse. Where the construction includes steel trusses, these are being enclosed in asbestos-cement sheets at the fire-curtain locations in the same manner as the timber beams or trusses.

By protecting its enginehouses in the manner described above, the Norfolk & Western believes that it is greatly reducing the fire hazard in such structures and that, with this type of protection, there is little chance of a serious fire occurring in an enginehouse. The program is being carried out under the general supervision of W. P. Wiltsee, chief engineer; A. B. Stone, assistant chief engineer, and W. L. Young, bridge engineer.



This Drawing Shows Details of the Fire Curtains and Column Encasement at the Shaffers Crossing Enginehouse

The 1944 Locomotive Inspection Report

The annual report of the I. C. C. Bureau of Locomotive Inspection again shows an increase in defective locomotives; accidents and resultant injuries also increase

THE continued pressure under which railroad motive power is being used in the handling of war-time traffic loads is again evident in the report of the Bureau of Locomotive Inspection for the year ended June 30, 1944, just issued by John M. Hall, director. The number of accidents and the injuries resulting therefrom showed a decided increase although deaths as a result of such accidents decreased.

The Bureau's inspectors found 12,710 locomotives, or 11 per cent, defective out of 117,334 inspected, and ordered 630 of these out of service.

In addition to the tabular data included in this abstract the report included a detailed analysis of defects in relation to the parts of the locomotive as well as by railroad. Summaries of accidents reported by road and arranged chronologically for the period, are also included in the report. The abstract follows:

Violent Explosions

All of the 19 explosions that occurred in the fiscal year, in which 12 persons were killed and 62 injured, were caused by overheating the crown sheets, due to low water. Five of these explosions, in which, with one exception, the boilers were torn from the running gears or frames, were particularly violent.

One of these accidents occurred while the locomotive was hauling a passenger train at an estimated speed of 70 m.p.h. The boiler was hurled about 700 ft. forward from the point of explosion; it turned over in flight and alighted on the track ahead of the train, then bounded and came to rest 900 ft. from the point of explosion, and 35 ft. south of the track. All wheels of the locomotive and tender, the first 10 cars, and the front truck of the eleventh car were derailed. The fifth and sixth cars came to rest in V-shape across the tracks, and the running gear and tender came to rest 1,300 ft. from the point of explosion. The firebox crown sheet with upper part of the door sheet and parts of both side sheets attached alighted, turned inside out, 400 ft. forward and 100 ft. to the right of the point of explosion. Three employees were killed and 9 mail clerks, 5 Pullman porters, and 15 dining-car employees were seriously injured.

In another explosion, which occurred while the locomotive was hauling a troop train at an estimated speed of 50 m.p.h., one employee was fatally injured and died approximately 30 hours after the accident, and two employees were seriously injured. The boiler was torn

from the frame fastening but remained attached to the cylinders; the main frames were broken off at the rear of the cylinders, all wheels were derailed, and the boiler and running gear came to rest at the base of an embankment approximately 249 ft. west of the point of explosion. The first eight cars of the train were derailed. The first car of the train, an express car, was derailed to the right at a 45 deg. angle to the track, the second car, a standard Pullman, was derailed to the left and stopped practically parallel to the track ahead of all other wreckage. The third car, a tourist Pullman, came to rest on top of the express car which was demolished. The fourth car was derailed to the right at a 45 deg. angle, the fifth car leaned on the track fill parallel to the track, and the three following cars remained in upright positions.

Three employees were killed in another explosion which occurred while the locomotive was hauling a freight train at an estimated speed of 30 m.p.h.; the boiler alighted 340 ft. forward of the point of explosion with the rear end fouling the track; it was struck by the running gear which was then derailed.

In another accident where the boiler

was torn from the running gear, in which one employee was killed and two employees injured, the locomotive, which had been hauling a freight train, was standing at a water tank. In its flight, the boiler destroyed the approach span of an overhead concrete highway bridge and came to rest on the slope of an embankment, 116 ft. from the point of explosion.

Need for Vigilance

Two employees were seriously injured in another accident caused by explosion of the boiler of a locomotive which was hauling a freight train at an estimated speed of 15 m.p.h. This boiler was not torn from the running gear or frame but the force of the explosion lifted the back end of the locomotive and caused it to derail and overturn on its left side crosswise of the north-bound and south-bound tracks. Parts of the wreckage were found scattered over a radius of 500 ft.

Five employees were killed and 26 seriously injured in the remaining 14 accidents.

Occurrence of explosions caused by overheating of crown sheets due to low



Here Is the Running Gear of a Locomotive After an Explosion in Which an Employee Was Killed—The Frames Were Broken in Eight Places and Both Track Rails Were Depressed 2½ Inches.



**An Overheated Crown Sheet on a Freight Locomotive Caused the Deaths of Three Employees—
The Explosion Threw This Boiler 304 Feet**

water, with consequent loss of life and serious injuries and damage to locomotives, clearly points to the hazard brought about by any relaxation of the vigilance normally exercised in the maintenance of safe water level or in the promptness with which the fire is extinguished in the event a safe water level cannot be maintained. All employees whose duties include responsibility for the maintenance of safe water level should see that water glasses, including water-glass cocks and all connections are properly blown out and gage cocks tested, and that all are known to be in good working order before each trip. The water level shown in the water glasses should be closely observed at all times, and the glasses should be blown out sufficiently often during each trip and movement of the water in the glasses carefully noted at that time and thereafter to insure that the level in the glass moves up and down freely with the water level in the boiler which is subject to practically constant motion over a narrow range when the locomotive is working. It should be specially stressed that those observing the water level should always be guided by the lowest indication of any of the water-level indicating devices if there is any variation in the indications; in other words, the least favorable indication should be considered as the correct indication. Gauge cocks should be tried frequently to check the level shown in the water glasses. If the water is below the line of sight in the water glass, emergency measures to protect the crown sheet from overheating should be taken at once; interpretation of a "flutter" of water from the bottom gauge cock as indicating safe water level in the boiler will in all probability result in disaster.

One thousand four hundred and four applications were filed for extensions of time for removal of flues, as provided in Rule 10. Investigations disclosed that

in 46 of these cases the condition of the locomotives was such that extensions could not properly be granted. Sixteen were in such condition that the full extensions requested could not be authorized, but extensions for shorter periods of time were allowed. Fifty-nine extensions were granted after defects disclosed by our investigations were required to be repaired. Forty applications were canceled for various reasons. One thousand two hundred and forty-three applications were granted for the full period requested.

Mechanical Stokers

The Commission's Order No. 24049, dated March 18, 1939, established Rule 118 (c), the first paragraph of which requires that all coal-burning steam locomotives which weigh on driving wheels 160,000 lb. or more to be used in fast or heavy passenger service and all coal-burning steam locomotives which weigh on driving wheels 175,000 lb. or more to be used in fast or heavy freight service, built on or after April 15, 1939, be equipped with a suitable type of mechanical stoker and that such stokers be properly maintained.

The second paragraph of the rule required the filing by each railroad which operated coal-burning locomotives of the above weights, with the Director of the Bureau of Locomotive Inspection, lists as of April 15, 1939, of all hand-fired locomotives of the specified weights built prior to April 15, 1939, which would in the future be used in fast or heavy service, that mechanical stokers be applied in each 12-month period to not less than 20 per cent of the total number so listed, that all locomotives included in the lists be so equipped before April 15, 1944, and that such stokers be properly maintained.

The number of hand-fired locomotives built prior to April 15, 1939, reported by the railroads as of that date to be

used in the future in services requiring the use of stoker-equipped locomotives was 2,171. The lists filed by the railroads were revised from time to time as traffic increased due to our preparedness efforts and our participation in the war, it being necessary to use in fast or heavy service all locomotives that could be made capable of such use because of inability to obtain a sufficient number of new and more modern locomotives satisfactorily to handle the greatly increased traffic.

These revisions in the lists, after adjustments due to conversion of some of the locomotives to oil burners, replacements with new stoker-equipped locomotives, assignments to other than fast or heavy service, and retirements, resulted in the application of stokers to 3,648 locomotives before expiration of the time limit on April 15, 1944. This number of locomotives upon which stokers were applied is 1,477 in excess of the number originally reported by the railroads required to be so equipped. Various extensions of time for equipment of 245 locomotives with stokers, all of which expired on or before December 31, 1944, were granted by the Commission pending shopping of the locomotives involved for classified repairs. Stoker applications to these locomotives are proceeding currently.

Man-power Saving

The equipment of these locomotives with mechanical stokers contributed materially to the ability of the railroads to handle war-time traffic successfully. The boilers of these locomotives are, in general, of such capacity that maximum power of the locomotives cannot be maintained over any considerable period of time by hand firing without hazard of physical exhaustion of the firemen. The installations of mechanical stokers resulted in making available the maxi-

mum power of the locomotives when needed and for long sustained periods of time, thus increasing their usefulness and ability in the movement of present-day traffic which is heavier, and for the most part, is moved with greater expedition than was ever heretofore thought possible.

A further assistance in our war effort brought about by the application of mechanical stokers to these locomotives is the saving in man-power and labor turnover, and reduction in lost working time, or absenteeism, of the firemen. The hand firing of these locomotives was an arduous task before present-day traffic conditions obtained and often resulted in the necessity for longer rest periods than are generally considered normal for persons engaged in that service; this condition would have been greatly accentuated, and many employees now regularly employed in the firing of stoker-equipped locomotives would have been compelled, for reasons of health, to leave that occupation if mechanical stokers had not been substituted for hand firing.

During the year 4.9 per cent of the locomotives inspected by our inspectors were found with defects or errors in

inspection that should have been corrected before the locomotives were put into use; this represents an increase of 0.5 per cent compared with the results obtained in the preceding year. Nine locomotives were ordered withheld from service by our inspectors because of the presence of defects that rendered the locomotives immediately unsafe; this represents an increase of three locomotives compared with the next preceding year.

Under Rule 54 of the Rules and Instructions for Inspection and Testing of Steam Locomotives, 583 specification cards and 5,996 alteration reports were filed, checked and analyzed. These reports are necessary in order to determine whether or not the boilers represented were so constructed or repaired as to render safe and proper service and whether the stresses were within the allowed limits. Corrective measures were taken with respect to numerous discrepancies found.

Under Rule 328 and 329 of the Rules and Instructions for Inspection and Testing of Locomotives Other Than Steam, 793 specifications and 28 alteration reports were filed for locomotive units

and 117 specifications and 100 alteration reports were filed for boilers mounted on locomotives other than steam. These were checked and analyzed and corrective measures taken with respect to discrepancies found.

Appeals

One formal appeal from a decision of an inspector, as provided in Section 6 of the law, was made during the year. Subsequent investigation resulted in the decision of the inspector being sustained.

This appeal was based on an order to withhold a locomotive from service which our inspector found in use with a crack in the hub of a main driving wheel. An earlier transverse crack had developed in the outer circumference of the hub between an intermediate and a short-length spoke, and fusion welding had been applied in an attempt to repair this crack. Our inspector found a crack at the edge of this welding which crack had extended to the outer face of the hub and into the hub 4 in. toward the axle fit. When re-examined following the appeal, the pres-



In This Low-Water Explosion the Boiler Was Thrown 116 Feet—One Employee Was Killed and Two Seriously Injured

ence of the crack was clearly evident without visual aid. It was stated in the appeal that a Magnaflex test of the wheel center had been made and that no crack was indicated by that test; after our reexamination the railroad officer who made the appeal advised that he had been misinformed as to the application of the Magnaflex test.

Recommendations

In accordance with the provisions of Section 7 of the Locomotive Inspection Act, the following recommendations, with reasons therefor, are made for the betterment of the service:

1—All steam locomotives should be equipped with a brake-pipe valve, similar to the conductor's valve used in passenger train cars and caboose cars, at the rear of the cab or the front end of the tender to enable the brakes to be applied in the event the enginemen are, from any cause, prevented from applying the brakes in the usual manner.

Numerous accidents have occurred where, due to sudden failure of steam pipes or other causes, the cabs were immediately filled with steam and the occupants were forced out of the cabs without opportunity to close the throttle or to apply the brakes in the usual manner. Practically the only way that a train can be stopped in instances of this kind is for the engineman or fireman to climb out of or over the cab and make way to the front end and open the front-end brake-pipe angle cock if it is accessible.

2—All road steam locomotives should be equipped with means whereby the height or quantity of water in the tender feed-water tank may be ascertained from the cab or tender deck of the locomotive.

In the interest of expeditious movement of trains it often becomes necessary while proceeding on the line of road for the locomotive crew to have knowledge of the height or quantity of water remaining in the tender tank. The common practice in these instances is for the fireman to make his way back over the tender coal space, or fuel oil tank, to the filling hole on the rear of tender, open the cover of the filling hole, and measure the water height by whatever means that may be available. While performing this service, many slips and falls resulting in serious injuries have occurred due to the swaying of the tender while the train is in rapid motion, and weather conditions which render it difficult to maintain safe footing. The results of accidents of the nature herein described are not recorded in the accident statistics of the Bureau of Locomotive Inspection unless due primarily to some defective condition of the locomotive; however, the unnecessary hazard in proceeding over the tender to the filling hole to measure the water in the tender while the train is in motion at normal speeds is apparent.

The first recommendation was made in a previous annual report. Some of the railroads have recognized the value

of the additional air-brake valve and have applied such a valve to a limited number of their locomotives. Likewise, some of the railroads have recognized the value of means to ascertain the quantity of water in the feed-water tank from

the cab or tender deck. However, compliance with recommendations 1 and 2 is by no means generally widespread, and installations are not progressing to the extent that could be desired to obtain the maximum degree of safety.

Table I—Reports, Inspections and Defects Found

	STEAM LOCOMOTIVES					
	Year ended June 30—					
	1944	1943	1942	1941	1940	1939
Number of locomotives for which reports were filed	43,297	43,064	42,951	43,236	44,274	45,965
Number inspected	117,334	116,647	113,451	105,675	102,164	105,606
Number found defective	12,710	11,901	10,970	9,570	8,565	9,099
Percentage inspected found defective	11	10	10	9	8	9
Number ordered out of service	630	487	474	560	487	468
Number of defects found	56,617	51,350	44,928	37,691	32,677	33,490

	LOCOMOTIVES OTHER THAN STEAM					
	Year ended June 30—					
	1944	1943	1942	1941	1940	1939
Number of locomotive units for which reports were filed	5,139	4,351	3,957	3,389	2,987	2,716
Number inspected	7,711	6,847	6,728	5,558	4,974	4,581
Number found defective	378	298	358	319	298	260
Percentage inspected found defective	4.9	4.4	5	6	6	6
Number ordered out of service	9	6	12	21	16	14
Number of defects found	1,026	849	928	905	766	696

Table II—Accidents and Casualties Caused by the Failure of Parts or Appurtenances

	STEAM LOCOMOTIVE, INCLUDING BOILER, AND TENDER					
	Year ended June 30—					
	1944	1943	1942	1941	1940	1939
Number of accidents	403	319	222	153	164	152
Number of persons killed	25	27	34	15	18	15
Number of persons injured	466	373	227	182	225	164

	STEAM LOCOMOTIVE BOILERS							
	Year ended June 30—							
	1944	1943	1942	1941	1940	1939	1915	1912
Number of accidents	141	129	81	43	67	52	424	856
Number of persons killed	17	25	30	12	16	15	13	91
Number of persons injured	194	173	83	64	110	55	467	1,005

	LOCOMOTIVES OTHER THAN STEAM				
	Year ended June 30—				
	1944	1943	1942	1941	1940
Number of accidents	17	15	9	11	7
Number of persons killed	23	18	9	11	7

Table III—Number of Casualties Classified According to Occupation

	STEAM LOCOMOTIVES									
	Year ended June 30—									
	1944		1943		1942		1941		1940	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Members of train crews:										
Engineers	7	128	11	109	10	79	5	41	5	70
Firemen	11	181	..	143	12	73	5	68	6	49
Brakemen	2	67	4	47	4	32	3	21	4	24
Conductors	..	11	..	8	..	7	..	8	1	4
Switchmen	..	5	..	12	..	5	..	6	..	4
Roundhouse and shop employees:										
Boilermakers	2	5	..	4	2	4	..	..	1	3
Machinists	..	2	..	3	..	5	1	3	..	3
Foremen	..	2	..	..	..	1	..	2	..	..
Inspectors	1	2	..	..	1	2	..	..	..	..
Watchmen	..	1	1	3	..	..	1	2	..	1
Boiler washers	..	..	..	..	..	..	..	..	..	..
Hostlers	..	12	..	1	..	4	..	3	..	2
Other roundhouse and shop employees	1	4	..	4	3	3	..	1	..	1
Other employees	..	6	..	11	2	3	..	9	1	20
Nonemployees	1	40	1	28	..	9	..	18	..	44
Total	25	466	27	373	34	227	15	182	18	225

	LOCOMOTIVES OTHER THAN STEAM									
	Year ended June 30—									
	1944		1943		1942		1941		1940	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Members of train crews:										
Engineers	..	4	..	3	..	5	..	1	..	2
Firemen	..	4	..	9	..	2	..	5	..	2
Brakemen	..	1	..	1	..	1	..	1	..	..
Conductors	..	1	..	1	..	..	..	1	..	1
Switchmen	1	..	1	..	..	..	1
Maintenance employees	..	4	..	2	..	..	..	2	..	1
Other employees	..	1	..	1	..	..	..	..	..	..
Nonemployees	..	8	..	..	..	..	..	1	..	..
Total	..	23	..	18	..	9	..	11	..	7

Should Technical Research Be Unified?

Two Railway Age editors bat it out with each other on the pros and cons of the proposed centralized research body

Two members of RAILWAY AGE's staff recently exchanged several memoranda on the subject of the proposed establishment by the A. A. R. of a centralized technological research organization. The background of one of these men, who may be called Spelvin, lies in the field of transportation economics. The other, here passing under the name of Doaks, is a mechanical department man.

The editor saw this correspondence and, in the belief that it went a long way in defining (if not resolving) the issue this question presents, directed the writers of these memoranda to rearrange their arguments in the form of a dialog for publication.

What follows is the result of this directive. Readers who wish to deal themselves a hand in this fight are invited to do so freely. That is what our Communications columns are for.

Spelvin—I am informed that Dr. Clyde Williams of the Batelle Memorial Institute, who has been acting as a consultant on technological research for the Association of American Railroads, has terminated this connection. The member roads of the Association have authorized the naming of a director of technological research to serve under Judge Fletcher—and so, it appears, the technological research program of the Railroad Committee for the Study of Transportation is right back where it started a year or more ago.

My understanding is that considerable opposition persists to the A. A. R.'s engaging in a large-scale program of centralized technological research—although such opposition is no longer outspoken in the Railroad Committee for the Study of Transportation, which, if my information is correct, has discussed this matter thoroughly and agrees that such research is highly desirable. It appears that the Railroad Committee may understand this situation, possibly, more thoroughly than does the A. A. R. directorate which, if I am correctly informed, was not convincingly shown wherein the proposed additional research program would be something more than an unnecessary duplication of the research assignment already performed by the technical divisions of the A. A. R.

Doaks—With respect to Dr. Williams' withdrawal, what other result could have been expected? The discovery of the hot problems of the industry which are backed by a wide unanimity of opinion does not need the help of an outsider. No matter how high his standing, what specific research projects could a man

unfamiliar with railroading be expected to dig up that would have the unified support of railway executives? Either he would have to deal in generalities or come forward with a list of projects the value of which would immediately be subject to a wide divergence of opinion.

Spelvin—But the war has brought many technological innovations which are applied at once to automotive and airplane transportation, and which can be adapted to railroad use only by special effort. Many if not most of these innovations might have profitable application on the railroads. Unless a vigorous effort is made to enable the railroads, also, to capitalize on such improvements, the railways may in the post-war period confront modernized competitors with pre-war railway technology. It is bad enough competitively for the railroads that their rivals are assisted by taxpayers with such unlimited generosity. It will be still worse for them if their competitors are able also to bring into play a superior technology—a condition which may occur if railroad technological advancement is not stimulated by an organization capable of giving it an extraordinary impetus.

Nature of Railroad Research

Doaks—It seems to me that too much weight has been given to the pronouncements on what railroad research ought to be by the group of "outside scientists" who stirred up this matter a few years ago. They concluded that what was the matter with the railroads was a lack of research programs such as are conducted by the Bell system and the electrical and automotive industries.

The fact that the railroads are the users of manufactured goods of great variety, not producers of them, is fundamental to the problem and nature of research in the railroad field as compared with that in those industries which turn out physical products. The railroads have never been blessed with enough available capital to do more than try to expand or improve those facilities which are directly employed in conducting transportation. No capital has been available for extensive development of plant facilities with which to manufacture transportation facilities.

Spelvin—One of the principal exponents among railroad officers of the proposed centralized research program maintains that, despite the apparent logic of the contention that primary responsibility for research rests with the manufacturers, the manufacturers are, nevertheless, not doing the development job to a degree sufficient to secure to the

railroads the benefits of an advancing technology, to anything like the degree that is possible—and highly desirable for the protection of the railroads' competitive position. He illustrates this contention by citing the experience of a research laboratory operated by an individual railroad to which manufacturers have brought their products for examination—which has frequently shown that these products, widely accepted by the railroads, have been seriously lacking in adequate design. They have proved weak where they should be strong and wastefully strong where strength is not needed.

The Post-Mortem Variety

He also characterizes the technological research work now performed by the A. A. R. technical divisions as primarily of the post-mortem or trouble-shooting variety. Valuable as this may be, my information is that the program which the Railroad Committee for the Study of Transportation wishes to undertake is far more comprehensive and fundamental.

Doaks—It seems to me we are likely to head into a lack of clarity in this discussion unless we define "research" and distinguish it from other associated factors. Something of this is evident in the contentions of the exponent of the proposed research program to whom you refer. I would define these terms as follows:

Scientific research looks toward the enlargement of the area of fundamental knowledge within a branch of science. Such research is conducted by a number of industries whose success depends upon the applications of specific branches of science. The business objective may be ultimate and not immediate.

Industrial (or engineering) research seeks the solution of industrial problems. There is an immediate business objective. Many railway test departments engage in this kind of research; there is a wide twilight zone, within which distinction between research and proof testing cannot be sharply drawn.

Design involves the application of established principles or rules in the creation of a structure or machine. Ultimately it benefits from research and invention, but is neither in itself.

Invention is the development of a combination of previously known or unknown factors for new purposes in the accomplishment of which the flash of genius is a factor. It may or may not be associated with engineering research or with design.

No conceivable reason can be for-

warded to justify the railroads' undertaking research in fundamental science. How long would a regulated industry be permitted to finance research from which many other industries would reap the principal benefit, even though the railroads were to receive a share of the benefit also?

Spelvin—Do I understand you to argue that, since the design of the things the railways use is the manufacturer's function, it is improper for the railroads to usurp this function as the railway laboratory I mentioned has done? If supplying the railways were intensely competitive, perhaps I could concede this argument, but I find it difficult to do so in the light of actual conditions. The railways require the best that technology can afford them because of their own competitive situation. If they are not getting the best because competition in the supply of railway materials is not sufficient to impel suppliers to perfect their products, then effective means toward that end are required. Your principles are valid for a given set of circumstances, but not, as I see it, for the actualities in the supply of railway materials. We have too many items for which the number of suppliers is so limited that the incentive to research by the manufacturer, which intensive competition would afford, is very weak.

Doaks—No, I have no objection to any railroad, or all the railroads acting through the A. A. R., controlling the design of any part of their facilities where the results of commercial processes prove inadequate. But don't forget that we are discussing the proposed establishment of a centralized research bureau. The correction of such situations as you outline has long been a part of the work of the present technical departments of the Association. Take the transverse-fissure problem, for instance. The cause and solution were found by the A. R. E. A. working with the rail manufacturers. And don't forget how the Mechanical Division by developing a specification of requisites cleared up an unsatisfactory draft-gear situation.

No Dearth of Research

As a matter of fact, it is worth noting that the latter situation was not the result of any lack of competitors; it was quite the reverse. On the other hand, I can think of several important products, which are sold to the railways with practically no competition, in the advancement of which over many years there has been no flagging of engineering leadership.

You imply that the railroads have been lacking in research. A look back over 50 or 60 years of railway history discloses that the railway industry has probably benefited more by industrial research than any other single industry. This research has been conducted by the railway supply industries, of which the railways constitute the exclusive market. It has been conducted by other industries, of whose market the railroads

constitute but a part. And the railroads have by no means refrained from the conduct of research projects themselves, both individually and collectively. Furthermore, a great deal of research has been stimulated and guided by the railroads, although not carried out by them.

Just a few more examples: the selection and development of a standard coupler; the selection and development of a system of power brakes; the development and use of the track circuit in signaling; the development of water treatment for which the chemical industry and the railroads can share the credit; improvements in metallurgy which the railroads have not yet fully exploited; the steady improvement in the quality of car wheels, both chilled-iron and steel, for which the respective industries, pushed at times by the railroads, are responsible. There are many other examples, perhaps less well known, though all of them involve industrial research of high quality.

Research of a High Order

Bringing the record down to date, the characterization of the research by the technical divisions of the A. A. R. as of "the post-mortem and trouble-shooting variety" is unfair. Strictly speaking, such work scarcely warrants the term research. But the study of counterbalancing conducted jointly by the Engineering and Mechanical Divisions is industrial research of a high order. And so is the work which has been done on axles during the past six or seven years under the auspices of the Mechanical Division.

A definite pattern runs through mechanical-department developments. In problems calling for invention, such as the need for a power brake or an automatic coupler, the railways, through one of their associations, formulated their requirements and then passed judgment on the competitive offerings of inventors, without attempting to limit the exercise of their ingenuity. In later years, after basic developments have been established, they have done much standardizing to meet the needs of interchange. It is the latter type of thing which lends itself to centralized control, but the record shows no need for it. At the other extreme, where imagination is supposed to be most needed (that is, where invention is involved) centralized direction and control of the process of developing new physical products is likely to be at its worst.

Spelvin—I can agree with you that the railroads' proper sphere is limited to what you define as industrial or engineering research, and design; and does not include scientific research, as you define it, or invention. I don't know enough about technology to argue with you about the adequacy of past accomplishments of research by or in behalf of the railroads, but your citations are impressive.

Doaks—It seems to me that the railway laboratory which you mentioned is

not primarily a railway laboratory at all. It is a laboratory owned by a railroad which is, in effect, selling its services, whether on a fee basis or some other basis of return I do not know, to other industries for the solution of their problems.

Spelvin—I don't see the significance of your argument. The point is, a lot of poorly designed railway devices which give unsatisfactory service were formerly purchased by the railroads—and their manufacturers were willing to sell inferior products until this railroad pointed out their deficiencies. The laboratory has in some measure corrected this condition. The results have justified this laboratory as a railway enterprise.

Doaks—I am not offering any criticism of such a set-up. I merely point out that it scarcely offers strong argument for the establishment by the railroads of a centralized research organization with a roving commission which would take in applications of almost every branch of science, the entire field of metallurgy, and a limitless range of problems involving nearly every type of manufactured product in the country, if it were to fulfill the objective your argument implies.

Undoubtedly there are cases, such as you mention, of companies that have offered products to the railroads which are poorly engineered, but I am not willing to concede that these cases are sufficiently general to justify the conclusion that the industries supplying the railroads are, as a whole, any less alert to the needs of good engineering or any less skillful in its application than are the railroads themselves.

Promising Subjects for Study.

Spelvin—The answer to this whole question, it seems to me, must lie in whether those who advocate large-scale research by the A. A. R. can name enough promising subjects for investigation, that are not now adequately probed by the manufacturers or existing railway technical research, to warrant a conclusion that additional effort in this direction by the railroads would be justified.

By a railway officer with technological training which I lack, I have been given a list of typical subjects, inquiry into which he believes would be highly profitable to the railroads—and of which investigation so far has been inadequately comprehensive. This list follows:

- (1) Lightweight freight-car design, including an evaluation of available materials from a standpoint of their ability to withstand shock stresses, age, and collision;
- (2) the development of stabilizers to eliminate vertical and horizontal oscillations in cars;
- (3) the development of boiler and firebox steel to overcome service failures, including aging and embrittlement fractures;
- (4) new freight refrigeration methods;
- (5) an adequate warning device for hot journals;
- (6) the elimination of decar-

bonization in rolled railroad steel; (7) combustion study of performance for Diesel fuels; (8) elimination of foaming and cinder cutting in locomotives; (9) alloy steels and proper design for weight reduction and increased service life of rail and fastenings.

Materials and Design*

My informant believes that the benefit to the railroad industry of successful research into these projects is obvious, and he advises that new techniques promise the solution of all of them. None is at present being pursued with the vigor and thoroughness requisite to a satisfactory solution at a speed commensurate with the urgency of the carriers' competitive situation. None of the present research organizations—either of the railroads or the manufacturers—has a definite responsibility to pursue research into these subjects, important as solutions of them would be to the railroads. Each one of these subjects is too big for any one railroad to tackle, and, since all the railroads would benefit if effective solutions were found, all should bear the expense of the development.

Doaks—You present an interesting list of projects. The objective in No. 1 will be influenced by two factors; that is, the materials and the design. Neither of these will be stabilized for some years to come. The probable rate of change is likely to demand a frequent change in the basis of such an investigation. Several projects for the improvement of passenger-car and freight-car trucks (No. 2) are already under way, some by individual railroads and some by manufacturers. Invention is likely to play so large a part in the solution of this problem as to preclude the effective application of centralized research.

With No. 3 it seems to me that it ought to be simpler to sell an individual railroad here and there on the merits of some new alloy steel for boiler and firebox construction than to get substantial agreement behind a general investigation of boiler metallurgy. The railroads have already been supporting a widely based joint research on the subject of embrittlement fractures. It seems to me that both No. 4 and No. 5 are in the stage where invention is the essence of the problem and need the widest possible base from which to secure ideas (and don't forget that ideas, once developed, have to be sold). As a matter of fact the Mechanical Division now has a special committee at work on the development of hotbox alarm devices.

But it is not my opinion, nor that of the railroad officer who suggested these subjects, that will determine the need for practicability of attacking them as industry-wide research projects. It is the unanimity with which the technical and executive officers of the autonomous units of the industry become convinced of their importance. To attempt to build up a central coordinating or controlling research bureau under A. A. R. based on

projects concerning the value of which opinion is divided, has got the cart before the horse, it seems to me. No central research organization can hope to be supported in carrying out a program of such projects.

If such unanimity can be secured, the actual machinery for the research can be found in existing organizations or can easily be established on a special project basis. It isn't a centralized research organization that is needed, but a consensus necessary to permit the study to be undertaken. If you can get the consensus, the centralized research organization is not needed. Without such consensus, the centralized organization cannot function.

One other point is worth mentioning. The character of American railroading is exemplified by the notable ingenuity exercised in finding ways to meet a constant succession of emergencies. It is from this quality that many of the outstanding improvements in railway facilities and methods have sprung. I am inclined to believe that, should future development of physical facilities be entrusted to the guidance and control of a central research organization, the effect in time would be to dry up the flow of new ideas down the line on the individual railroads. The engineer is primarily an analyst; the inventor is a synthesist. We need the latter quality wherever it can be found and developed. To place too much centralized control in the hands of the engineer will not serve this purpose.

Danger of Bureaucracy

Spelvin—I am aware that a centralized research organization might tend to become bureaucratic, with an inclination to stifle research projects which it did not originate; and that its existence might afford an excuse for inactivity by individual railroads (as public relations work by the A. A. R. now affords an excuse for the failure of some railroads to pursue adequate programs of their own in this field). This objection, however, attacks a proposal because it might be subject to abuse—and I do not think the argument is valid unless it can be shown that the abuse is both inevitable and certain to entail more evil than good.

Doaks—If the burden of proof that a large-scale centralized technological research could step up the rate of progress of the railways in improving their physical facilities had been discharged by its proponents, I might accept your view of the validity of my argument as to the stifling effect of a central research bureau. But that burden has not been discharged. Your sample list of proposed projects is far from convincing. Those suitable for railway research are of the kind which have been conducted successfully by individual railroads or under the auspices of the technical divisions of the association.

Indeed, one suspects that the central-

ized research "vision" is in reality a "mirage." At least, proof seems to be lacking that the necessary appropriations to be spent through present technological channels of the association by the "team" method would not produce as good results on worthwhile projects as though spent through the proposed super-bureau.

Spelvin—I admit my technological illiteracy, but whether and how technological research in behalf of the whole railroad industry should be conducted is not alone a problem of technology but of effective organization to meet the facts of the present-day railroad situation—hence my presumption in raising questions about it. From the evidence you cite, it is clear that some aspects of railroad development are adequately protected by the existing set-up. But the suspicion still remains in my mind that there may be many vital projects large enough to require joint effort which are not tackled now because no one man or no one group is charged with over-all responsibility to see that no promising avenue of inquiry remains unopened.

I am confirmed in this suspicion by the railroads' failure, so far, to develop mechanical refrigeration for perishables at a time when ice refrigeration has become ancient history almost everywhere else in the handling of foods. Development here has to be cooperative because of cars' movement off of home lines. Individual initiative, either by railroads or manufacturers, cannot cope with a problem of such dimensions. Yet, if there is any serious and comprehensive joint effort going forward in this direction, it has escaped my attention. Still, because no organization has been given responsibility for the over-all adequacy of railroad research, we cannot lay the blame on anybody. This, to my mind, reveals a defect in organization.

Doaks—I think you will find that the difficulty in putting over the substitution of mechanical refrigeration for ice in refrigerator cars is not primarily technological; it lies in the field of operating technique and economics.

"Team" Organizations

As a matter of fact, several developments are under way for the improvement of refrigerator-car service. One of these is particularly interesting; that is, the movement for cooperating with the A. A. R. and private-car owners which has been started by the United Fresh Fruit & Vegetable Association. It recognizes that there is no magic solution for any refrigerator-car problem but promises a close working arrangement between refrigerator-car users, owners, and the railroads in the interests of improved service.

So far as organizing for research is concerned, the tendency in some other industries is toward the "team" organized around the project, rather than the permanent staff type of organization. It was such a team organization under a director of research for the project

(Continued on page 240)

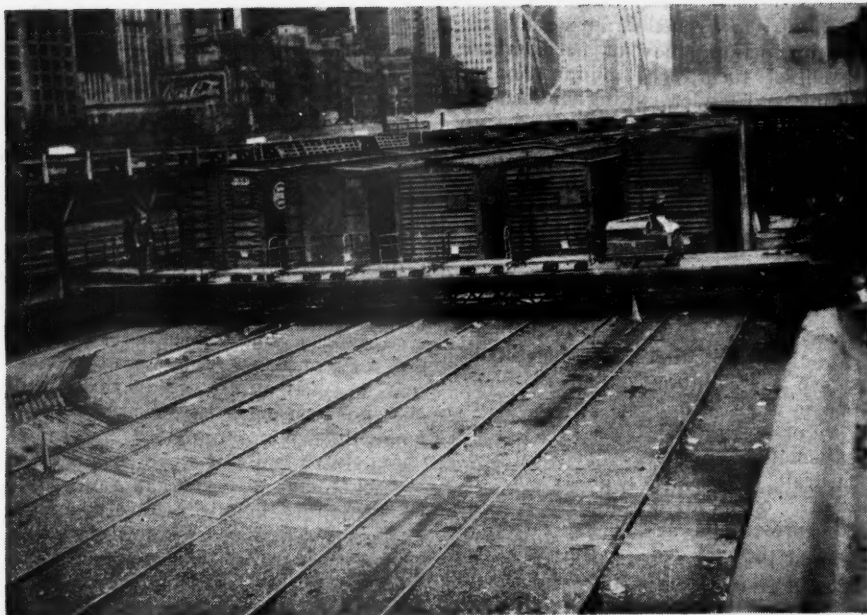
Speakers Speed Freight Movement



One of the Loudspeakers Mounted Overhead on the Closed Platform

A PUBLIC address system has proved to be of great value in expediting the movement of freight in the Illinois Central's outbound freight house at South Water street, Chicago, Ill. Fast freight trains move from this terminal and it is important that the cars be loaded efficiently and on time. One example of fast freight service is a train which leaves the Chicago terminal at 7:45 p.m. and arrives in Memphis, Tenn., at 8:20 a.m. Any cars not ready at train time must be held over until the next day.

There are six loading tracks in the outbound yard. On one side of these tracks is an open, door-level loading platform with only a shed roof, and on the other side is the outbound freight house with door openings which match with the positions of the car doors. Only 40-ft. cars are used. The six tracks are stub-end and a cross-platform connects the long loading platform and the freight house floor. A swinging platform is used at the other ends of the cars to connect the loading platforms and to make a complete runway around the cars on the loading tracks. This platform is a bridge hinged at one end and fitted with rollers at the other. When the cars are ready for loading, a tractor is used to pull the free end of the bridge across the tracks. Wooden



The Swinging Platform at the Open End of the Loading Tracks

The sixth track, beyond the short platform extension where the swinging platform hinges at the right, is reached from the fifth by a cross-over.

crossing planks arranged in a curve between rails and between tracks, make a roadway for the rollers. When the cars are loaded the platform is pulled back to clear the tracks.

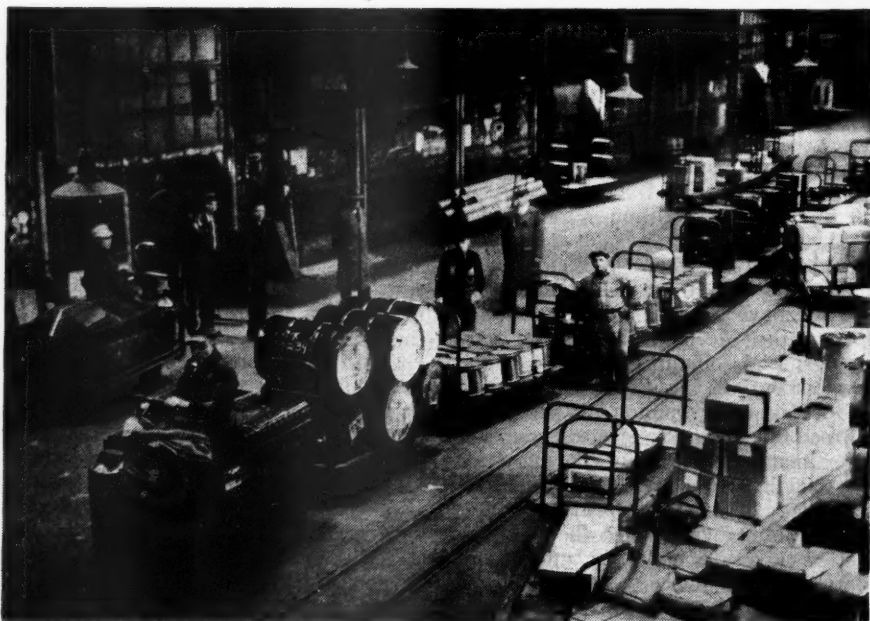
The 40-ft. cars are spotted so that doors on adjacent tracks are opposite each other. Portable skids are placed between doors, making a cross-runway at each door position. These runways are used for hand trucks, for trailers and for tractors, but not for tractor-trailer trains.

Incoming freight is brought to the terminal in freight cars which are delivered to tracks outside the loading

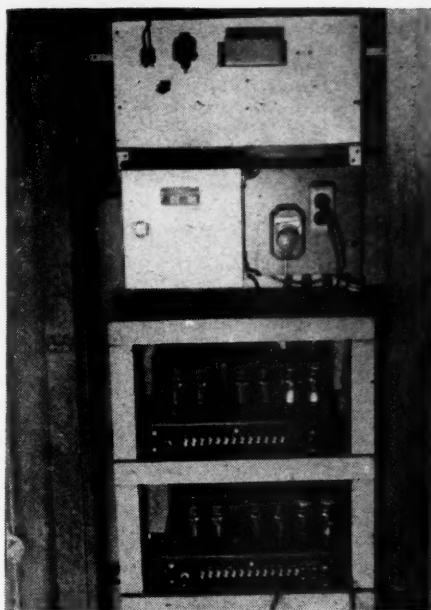
platforms, by trucks operating over Chicago streets and through the freight tunnels of the Chicago Warehouse & Tunnel Company. These tunnels cover the territory in the Chicago loop district.

From the unloading platforms and the elevators which bring freight up from the tunnels, it is moved by tractor and trailer trains to the outbound cars. There are 15 tractors, which are battery-power electric units, and 980 trailers. All trailers have recently been equipped with solid synthetic rubber tires since the noise made by the steel wheels, as measured by a sound intensity meter, was equal to that to be found in a small boiler shop.

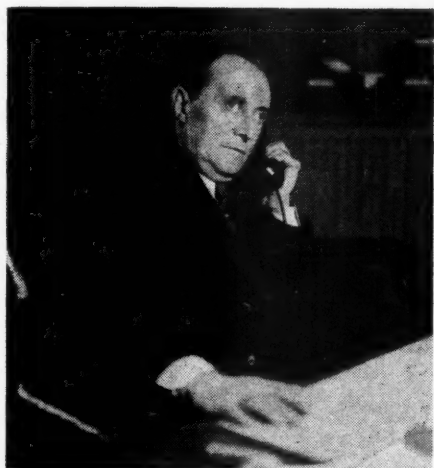
There are 60 checkers employed in the terminal and 300 truck operators and freight handlers. The loading platforms are 1,500 ft. long and when the loading



Type of Tractor-Trailer Train Used for Handling Freight



The Two 50-Watt Amplifiers Are Located in an Insulated Booth in Which a Minimum Temperature Is Maintained by a Thermostatically - Controlled Electric Heater



General Foreman, Thomas J. Horan, Making an Announcement from the Desk in His Office

tracks are full they include 200 cars with facilities for a 22-car expansion. Groups of cars are marked for certain destinations. Some of these cars are sufficient to take care of one day's loading of freight for a given destination while others during the day fill up and another car elsewhere in the track setting must be substituted.

Public Address System

Although the work is highly systematized, there are such a great variety of operations in progress at one time that constant and accurate supervision is necessary. Any irregularity—and there must of necessity be many—must be disposed of quickly if confusion is to be avoided. This is further complicated at the present time because freight

movement is heavy and the turnover among the freight handlers is large.

To provide for quick communication from the general foreman or the assistant or roving foreman to all checkers, tractor operators and freight handlers, and thereby avoid delays and reduce the large amount of footwork necessary for supervision, it was decided to install a public address system in the terminal. The system which is now in service includes 33 loud speakers. One of these is located in the general foreman's outer office for the clerical staff and the remaining 32 are placed at variable intervals along the two loading platforms, 17 on the open platform and 15 in the freight house. It is necessary to have the speakers somewhat closer together on the open platform and it is also necessary to regulate the output of each speaker for the particular area it covers and to conform with the noise developed in that area.

The output from each speaker varies from $2\frac{1}{2}$ to 5 watts and the value is controlled by varying the impedance of the line side of the speaker transformer. The output requirements were determined by making noise measurements under actual working conditions and speaker output was then adjusted to the correct values. The noise measurement surveys were made by Radio Corporation of America sound engineers.

All instructions are issued either by the general or the assistant foreman and there are only two microphones or handsets which are carried by these two men. There are six microphone jacks in the six locations from which announcements can be made. One of these is in the general foreman's office and the other five in five of the checkers' booths in the freight house.

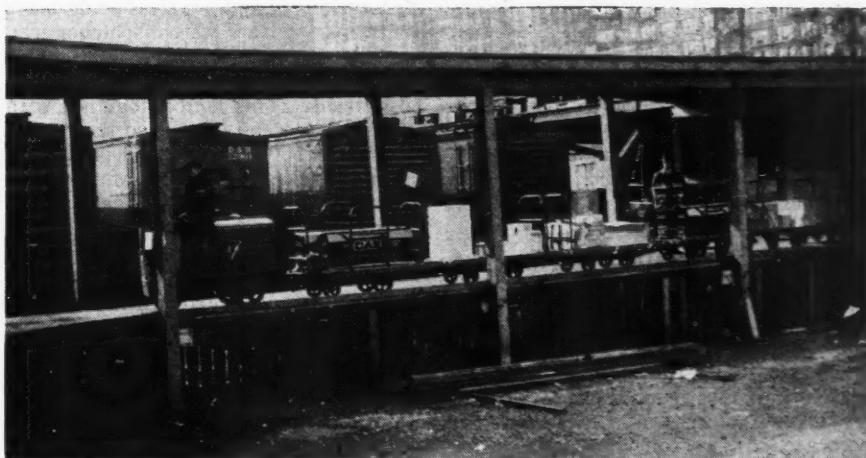
The handsets are push-to-talk units with carbon type microphones which supply the input circuit to two 50-watt amplifiers, each of which carries half of the loud speaker load.

The address system is used to notify checkers of any change in the order of work and for making announcements. It has proved invaluable for redirecting freight scheduled for a car that is full

and sending it to the next car available for the same destination. This avoids double movements, congestion and delays. Similarly, notice is immediately broadcast of a bad order car. In so large an area it is difficult to locate some particular man who is wanted. By making an announcement on the address system, the man may be directed to one of the PAX telephones located at several points on the platforms where he can talk with the foreman.

The system is also proving invaluable in the promotion of safety in that it gives the general foreman an opportunity to more frequently give the organization short talks on safety. Without the public address system, it would be necessary to stop all freight movement while checkers and handlers were called to a central point for the purpose of listening to such talks and to general instructions from the general foreman.

Assistant General Foreman, Maurice Crowley, Using His Handset in One of the Checker's Booths—The Receiver End of the Set Is Not Used



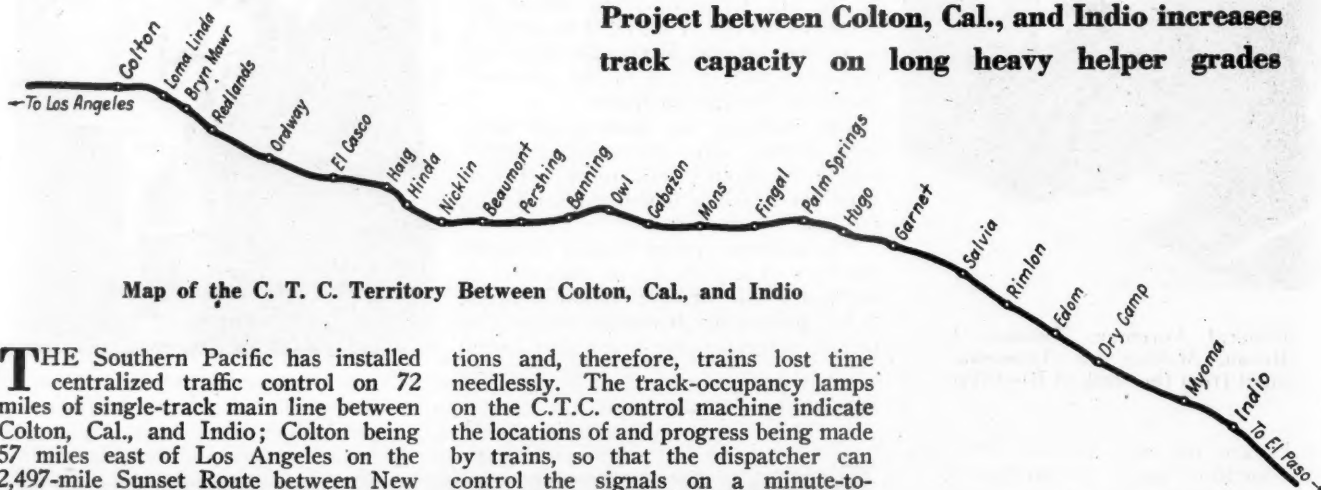
The Cross-Platform at the End of the Loading Tracks



The C. T. C. Control Machine Is in the Office at Beaumont

C. T. C. Aids Trains Up Grades on S. P.

Project between Colton, Cal., and Indio increases track capacity on long heavy helper grades



Map of the C. T. C. Territory Between Colton, Cal., and Indio

THE Southern Pacific has installed centralized traffic control on 72 miles of single-track main line between Colton, Cal., and Indio; Colton being 57 miles east of Los Angeles on the 2,497-mile Sunset Route between New Orleans and San Francisco. The entire territory from Colton to Indio, 72.3 miles, is controlled by one C.T.C. machine in an office at Beaumont which is 23 miles from Colton and 49.3 miles from Indio.

Under the Old System

Previously when train movements were authorized by timetable and train orders, about 100 to 125 train orders were issued daily for the Colton-Beaumont section, and about 180 train orders were issued daily for the Beaumont-Indio section. In some instances train orders could not be issued fast enough to take advantage of changing condi-

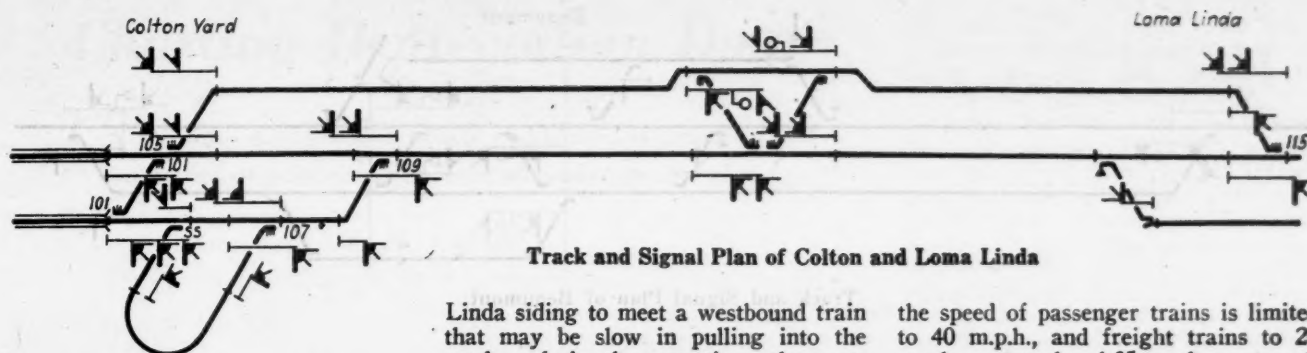
tions and, therefore, trains lost time needlessly. The track-occupancy lamps on the C.T.C. control machine indicate the locations of and progress being made by trains, so that the dispatcher can control the signals on a minute-to-minute basis, thereby arranging for very close meets. This factor, together with the use of power switches so that trains need not stop to enter or depart from passing tracks, saves a lot of time. A study shows that the average time of westbound freight trains has been reduced from 8 hr. 26 min. to 7 hr. 9 min., a saving of 1 hr. 15 min. The average time of eastward trains has been reduced from 7 hr. 2 min. to 5 hr. 27 min., a saving of 1 hr. 35 min. The helper locomotives which operate between Indio and Beaumont reduced the average time for each round trip from 9 hr. 28 min. to 7 hr. 56 min. The helpers which work between Colton and Beaumont reduced the average time

for each round trip from 4 hr. 52 min. to 3 hr. 52 min. These crews, therefore, can now make two round trips in one trip, whereas the best they could do before was one trip.

Why C. T. C. Was Installed

The centralized traffic control was installed on the Colton-Indio section as a means for increasing track capacity in territories where train speeds are slow because of long heavy grades and where the number of train movements are increased by the return of helper engines to the bottom of the grades.

At Colton the Southern Pacific inter-



Track and Signal Plan of Colton and Loma Linda

changes freight traffic with the Union Pacific, the Atchison, Topeka & Santa Fe, and the Pacific Electric. Also the Southern Pacific has two branch lines out of Colton, and local trains operate out of Colton to the Redlands branch which connects with the main line at Bryn Mawr, 5.3 miles east of Colton. For these various reasons many of the through freight trains set out and pick up cars at Colton.

The elevation above sea level is 943 ft. at Colton, from which point the railroad ascends a grade of about 1.5 per cent for 23 miles to Beaumont, at an elevation of 2,559 ft. East from Beaumont the railroad descends at a grade of about 1.9 per cent for 20 miles to Palm Springs, and from there to Indio for about 28 miles the grade continues to descend eastward at rates varying between 0.4 and 1.8 per cent. Indio is 20 ft. below sea level and Salton, which is 27 miles east of Indio, is 202 ft. below sea level.

Balloon Track Saves Time

In order that switching operations could be carried on at the east end of Colton yard without interfering with train movements on the main line, a yard lead tail track was extended eastward to connect with the main line at switch 109, as shown on the plan of Colton. When the helper locomotives return light from Beaumont to Colton they are turned before returning to the yard to be made up in other trains. This turning is done on a "balloon" track. When a westbound light engine approaches Colton the dispatcher uses the C.T.C. control to reverse the east end switch No. 109 and the balloon track switch No. 107, so that the locomotive is routed to the balloon. The leaving end of the balloon is connected to the tail track by a spring switch so that the helper locomotive need not be stopped to return to the tail track.

A long siding, with a capacity of 258 cars, extends between switch 105 at Colton and switch 115 at Loma Linda, with a set of two crossovers at the middle so that trains can enter or leave at this mid-point or at the ends of the siding. The principal purpose for this Loma Linda layout is to hold westward trains when the Colton yard is not ready to accept such trains. In other instances eastbound trains are pulled out of the yard and into this Loma

Linda siding to meet a westbound train that may be slow in pulling into the yard, and, in the meantime, the eastward train can depart from Loma Linda, whereas if it had been held in the yard it could not depart. Railroad restaurants are located at the east end of Loma Linda and at the center crossovers, so that train and engine crews can eat their meals while waiting, thereby saving time at other places on the road.

The new track arrangements at the east end of the Colton yard and at Loma Linda were planned to prevent congestion at these locations, and then thought was given next to changes required to keep trains moving on the road.

Passing Tracks Lengthened

Prior to 1941 the capacities of the passing tracks ranged from 65 to 78 cars, and, therefore, the first phase of the program to get more traffic over this division was to lengthen these passing tracks to hold longer trains. As a general rule they were lengthened to about 6,450 ft., which provides capacity for a train of 100 cars including a caboose and three locomotives with an allowance of 10 car lengths extra for train stopping distance. Between Loma Linda and Beaumont there are six single passing tracks, at Redlands, Ordway, El Casco, Hinda and Nicklin. At Beaumont a special track arrangement is provided, as shown in the diagram, so that the helper locomotives can be cut off the trains and at the same time other trains can pass.

On the east side of the grade between Beaumont and Indio there are 13 passing track layouts, all of which are single except at Cabazon and at Garnet where there are two sidings, one on each side of the main track. The extra siding at Cabazon was built at this location because eastbound freight trains are required to stop here for approximately 10 minutes to allow the wheels and brake shoes to cool, as well as to permit the trainmen to inspect the train.

Volume of Traffic Increased

The maximum permissible speed is 60 m.p.h. for passenger trains, and 40 m.p.h. for freight trains. Because of the grades and curvature in the Redlands canyon on 15.7 miles between Redlands and Beaumont, the speed of passenger trains is limited to a maximum of 40 m.p.h., and freight trains to 35 m.p.h. eastward and 25 m.p.h. westward. Between Beaumont and Garnet, 26 miles,

the speed of passenger trains is limited to 40 m.p.h., and freight trains to 20 m.p.h. eastward and 35 m.p.h. westward.

As the war program developed, a large volume of both passenger and freight traffic was thrown on to this section of railroad. The schedules include 5 passenger trains each way daily, and on the average there are 3 to 5 extra passenger trains each way daily. The number of through freight trains varies from 7 to 8 each way daily. On the average the number of train movements, including light engines, totals from 50 to 60 daily.

The through passenger trains are operated largely by Class GS locomotives which have a tonnage rating of 2,000 tons eastward between Colton and Beaumont, and 1,925 tons westward between Indio and Beaumont. If a passenger train has more than 10 cars, which is the case in practically all instances these days, a helper locomotive is required for each train.

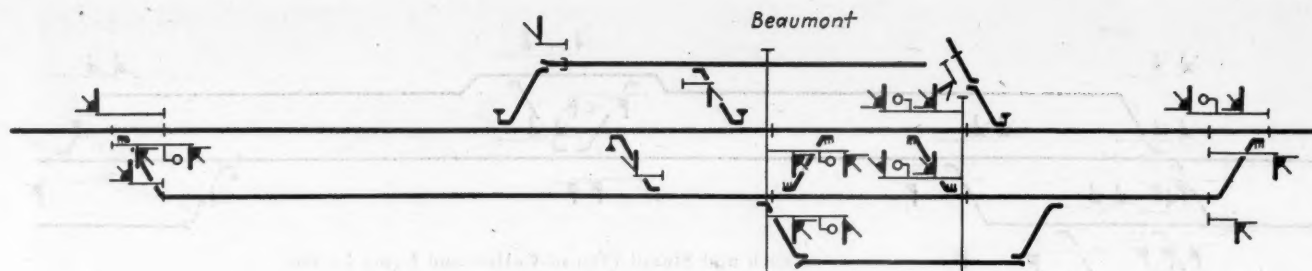
A considerable number of the locomotives used on through freight trains are the Class AC, rated at 2,125 tons eastward from Colton to Beaumont, and at 2,050 tons westward from Indio to Beaumont. As a general rule each eastbound freight train is made up at Colton with about 4,000 tons or a maximum of 90 cars, using three locomotives, one at the head end, one two-thirds of the way in the train and the third at the rear ahead of the caboose. On arrival at Beaumont, the crest of the grade from either direction, the trains are stopped while the helper locomotives are cut out, and the train then proceeds eastward to Indio with only one road locomotive.

Similarly, helper locomotives are used on westbound trains from Indio to Beaumont, and then a single locomotive can handle the train from Beaumont west to Los Angeles.

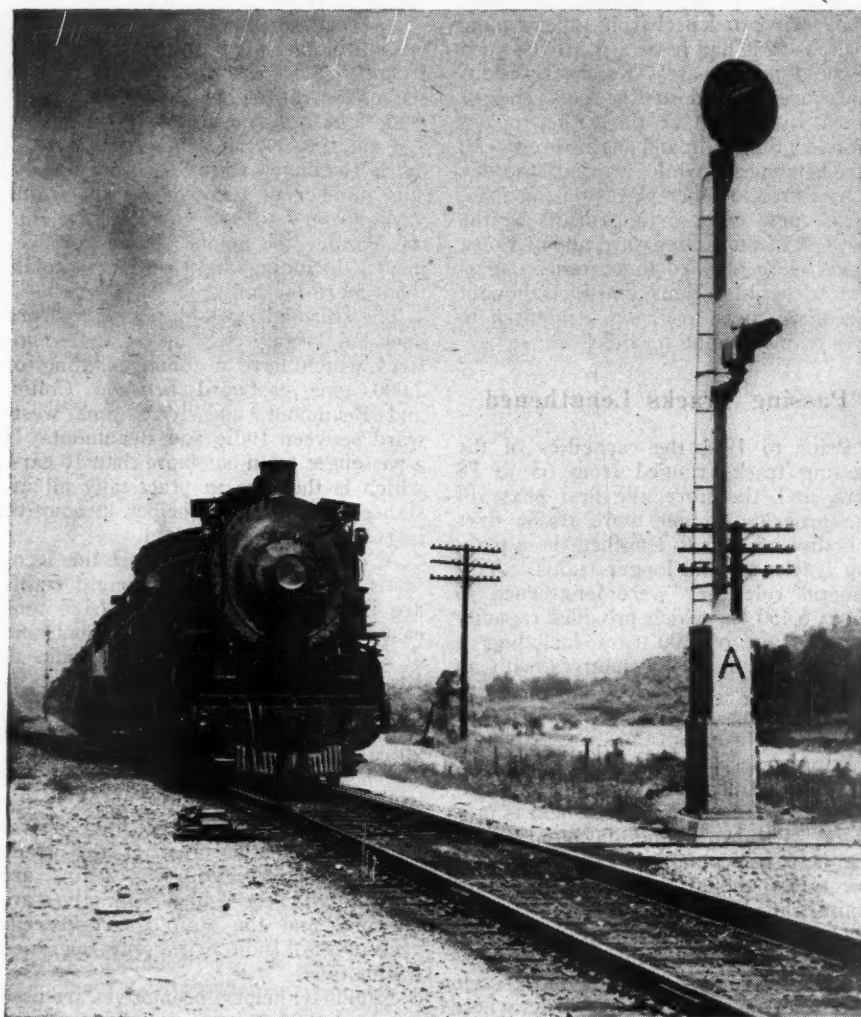
Prior to the recent improvement program this territory had been equipped for many years with lower-quadrant two-position automatic block signals controlled by overlap circuits. This signaling was removed, all of the signals in the new installation being of the searchlight type. Likewise most of the relays, line wire and pole line are new, so that as a matter of fact, it is practically a new installation.

Special Signal Aspects

The turnouts at the ends of the passing tracks are either No. 12 or No. 14 with 24-ft. points, so that diverging train movements can be made at speeds



Track and Signal Plan of Beaumont



up to 25 m.p.h. which is not much less than the maximum freight-train speed on the main line on much of this territory. The passing tracks are equipped with track circuits. When a power switch is reversed and a station-entering signal, such as signal 11 in the diagram, is clear for a train to enter, the aspect is Red-over-Green to enter a passing track which is not occupied; or Red-over-Yellow to follow a leading train

The New C. T. C. Signals Are of the Searchlight Type

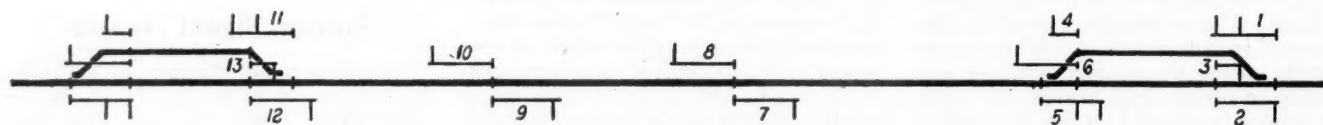
which is occupying the passing track. If the dispatcher wants a train to enter a passing track which is occupied by an opposing train the signal displays the Red-over-Red aspect and the head brakeman or conductor goes to the telephone so that the dispatcher can explain the special circumstances.

If the sighting distance to a station-entering signal, such as signal 11, is adequate, the signal in approach displays the single yellow, Approach, aspect as advance information when the station-entering signal is displaying the Red-over-Red, the Red-over-Green, or the Red-over-Yellow aspect. However, if the sighting distance to a station entering signal, such as signal 11, is short, an engineman would have to approach it prepared to stop if he got only a yellow on signal 10. In such instances when signal 10 is cleared to display Red-over-Green to enter a non-occupied passing track, then signal 10 displays Yellow-over-Green. This gives an engineman advance information so that he can run his train up to and through the turnout at 25 m.p.h., thus saving time.

No Red with a Green

A special practice on the Southern Pacific is that on a two-unit signal, such as station-entering signal 5, if the line up is for a through move on the main line with a green aspect in the top unit, then the lamp in the lower unit is not lighted, this being different from the conventional practice of a red light also in the lower unit. The thought on the Southern Pacific is that a clear aspect should not include a red light because an engineman might see this red light before he saw the green and thus cause confusion in his mind. Thus on the Southern Pacific the lamp in the lower unit is lighted in combination with that in the top unit only when a diverging route is set up, or as a red under a red for the absolute stop aspect. The lower unit will display red in the event the mechanism of the top unit is in the proceed or caution position and its light is out.

This centralized traffic control was planned and installed by the signal forces of the Southern Pacific under the direction of R. D. Moore, signal engineer. The major items of signaling equipment were furnished by the Union Switch & Signal Company.



Signals Arranged to Save Train Time at Sidings

Charting Depreciation Data

A method is explained which yields all information on status of property depreciated under group plan

By H. J. DOW

THE subject of depreciation accounting is attracting widespread attention at the present time because of the growing need for up-to-date statements of conditions, and a demand for the leveling out of operating expenses. The part which depreciation plays in such matters warrants special study in an effort to determine the most practical method of estimating depreciation accruals.

The accruals are the property values lost through depreciation. When a property is fully depreciated, the accruals equal "service value" (original cost less salvage). In depreciation accounting, charges for accruals are found by prorating the estimated service value over the entire service life of the property.

The annual accruals for road property, according to rules laid down by the Interstate Commerce Commission, must be computed in conformity with the group plan by applying a percentage rate to original cost. The cost is fixed, but the percentage rate varies with service life and with service value. Until those service factors are known, the exact rate cannot be determined. However, tentative rates for current use may be estimated with reasonable accuracy by observing the rates and trends of the past.

Depreciation Rates

For the purpose of finding depreciation rates of the past, three classes of property are considered: simple units, complex units, and composite groups. Simple units remain intact throughout

service life. The normal percentage rate of depreciation is found by dividing 100 per cent by service life but that rate, when used in connection with original cost, must be modified by the service value ratio (service value over original cost). For example: if service life is 20 years, the normal percentage rate is 5 per cent, but if service value equals 90 per cent of original cost (salvage value being 10 per cent), the basic rate is only 4.5 per cent.

Complex units are those composed of various parts. Whenever any of the parts are added or retired during service life, the original cost of the property is changed. Every change in original cost affects the service life of value and thereby alters the depreciation rate. Consider the following example:

Original investment in 1900	\$16,000
Addition in 1906	3,640
Retirement in 1912	2,490
Final retirement in 1930	17,150

Computation for Straight-Line Depreciation

Period	Additions	Retirements	Balance	Dollar-Years
1900-1906	\$16,000		\$16,000	96,000
1906-1912	3,640		19,640	117,840
1912-1930		\$2,490	17,150	308,700
1930		17,150		
Total	\$19,640	\$19,640		522,540
Normal depreciation rate	(19,640 divided by 522,540) .0376			
Average service life	(522,540 divided by 19,640) 26.6 Years			

From time of original investment in 1900 to final retirement in 1930 is thirty years but, due to the 1906 and 1912 changes, service life of value is only 26.6 years.

By reason of the interim changes, the normal percentage rate of straight-line depreciation is increased from 3.33

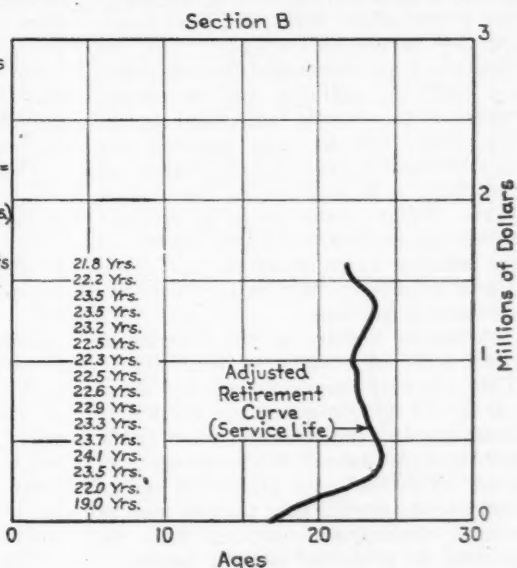
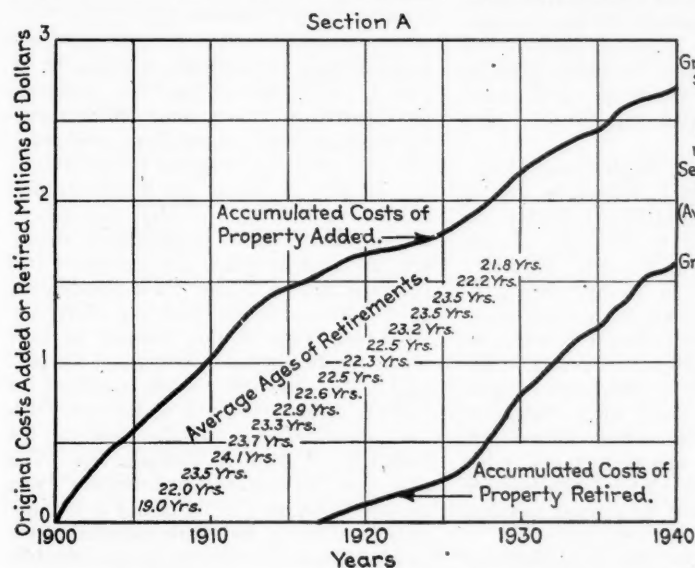
per cent to 3.76 per cent. From this, it is apparent that every investment change during the life span increases the straight-line rate of depreciation.

Composite groups include both simple and complex units. The individual units and values are often changed through additions and retirements. Due to revised methods of construction, maintenance, and operation, the service lives of the new units frequently differ from those of the old. During a single decade considerable change may take place in the average service life of the composite group. For that reason the average service life of the group for a specific period of the past does not of itself provide sufficient data for a reliable forecast of the future. When using the group plan, required by the Commission, several periods in succession must be examined in order to develop a trend curve which will reflect the progressive conditions.

When computing average service life of a group for any specific period of the past, it is not necessary to examine separately the life of each individual unit. The collective units, properly weighted for life and value, have an average service life equal to that of the investment credits. Therefore, the credits may be

combined and used for determining average life. All of the dollars are of equal value, so the normal average age of retirement is found by assuming that the dollars first installed were the first to be retired.

The average age of retirements during any period within the past 25 years



Investment Chart, Frame and Pile Trestles

Costs from Engineering Report and Subsequent Reports Under Valuation Order No. 3—This Chart Being Reproduced from Original by H. J. Dow

may be obtained through use of the data found in the Engineering Report and the Valuation Order No. 3 records. Those records show separately the annual debits and credits to the investment account. From those the average life may be computed, but accurate results may be had with a tremendous saving of effort by charting the data and then scaling the lives. Such charts are simple in construction and, once drawn, furnish a comprehensive picture of the entire situation.

To illustrate the construction and use of the investment chart in solving the depreciation problem, a factual record of frame and pile trestles is used in the graph herewith. The record chosen includes the cost of both main and branch line structures on a railroad located in one of the Central states. These structures, originally built of plain timber, have now been replaced in part by treated timber. Since the record covers a large group of miscellaneous timber trestles, it provides a fair example of composite property.

The construction of the graph or investment chart is as follows: At year 1900, the ordinate—or vertical measurement—is zero; at year 1901, the ordinate represents the investment between the end of year 1900 and end of year 1901; at year 1902, it represents the investment from the end of year 1900 to the end of year 1902; so that at any year, the ordinate represents the algebraic sum of all of the investment from the end of year 1900 up to that year. The retirements are plotted in the same manner. Section B is constructed by utilizing the horizontal distances measured between the curves on Section A.

Chart Properties

The properties of the chart are: (1) the difference in length between any two ordinates is the measure of the investment, or retirement, between the years at which the ordinates are drawn; (2) additions equal retirements between any two points where horizontal lines intersect the curves of the chart; (3) the measure of any horizontal line intersecting both the addition and retirement curves is the normal retirement age at that level; (4) the area between any two horizontal lines and the curves of the chart is a measure of the dollar-years (dollars times years in service) within the enclosure; (5) the portion of the addition curve above the horizontal line of total retirement measures the investment remaining.

A special feature of the investment chart is the adjusted curve in Section B. This not only shows the normal average age of retirements at any given date level, but also indicates the trend of the averages throughout the retirement period. With that as a guide, the age of retirements during past periods may be readily determined, compared with the present, or projected into the future.

Next in importance to the average age of retirements, is the average age

of property remaining. This age is found from Section A either by scaling the lives or computing the area. The computed area divided by the live investment gives the average age. The average age of the live property taken in connection with the projected life measures the approximate amount of depreciation accruals in the live property.

The chart, based either on original cost of road property or ledger value of equipment, shows the average lives and trends of the property as a whole. By presenting a complete picture of past experience, it provides a ready means of estimating the approximate service life of the future. Through its use, the total accruals on valuation date, or any subsequent date, can readily be ascertained. Reference to the chart makes this possible at frequent intervals.

Produced at a nominal cost, the investment chart furnishes accurate data for a practical solution of the depreciation problem. There are few, if any, other available methods presented in progressive form which offer a complete solution.

Distress and Warning Lights for Trains

Several lights for use by trains which have been derailed, stopped unexpectedly or for signaling to approaching trains have been developed by the Mars Signal-Light Co., Chicago, Ill. One of these lights, designated WR-5000, for use on high-speed passenger trains, produces a 500,000 candle-power beam of white light which oscillates in the form of a horizontal figure eight and which can be changed to a red beam when necessary. The white light serves as a warning at grade crossings and the red one may be used by the engineer in the case of an emergency which may obstruct the opposite main track. The second headlight, available for locomotives other than high speed which do not require the white light, is made up with a red beam projector only. A third lighting unit for protecting the rear end of trains produces a powerful red beam which does not oscillate.

The headlight for high speed trains has two fixed outer reflectors and a movable 10-in. parabola reflector in which is mounted a 40-amp., 12-volt lamp. There are two such reflectors placed at an angle of 90 deg., one having a real lens for use as a distress or warning light. The reflectors are caused to oscillate by a 40-watt, 12-volt, 6,000 r.p.m. motor which is reduced to 8 r.p.m. on the oscillator shaft by a reduction gear. The control switch allows for bright, dim, and emergency red positions. There is also a push button switch for inching the light to a fixed position such as for use on curves.

The headlight for use on freight or lower speed trains employs a standard 250-watt, 32-volt locomotive headlight

lamp in a 12-in. parabolic reflector. It produces a 350,000 candle-power red oscillating beam. The driving motor is rated 84 watts and 32 volts. The lights are furnished with pressed steel cases for use on Diesel-electric locomotives and for steam locomotives a cast aluminum case is used.

Technical Research

(Continued from page 233)

which carried through the development of the AB brake, with the cooperation of the air-brake manufacturers. Teams can be set up without the intervention of a central research bureau.

For several years the Mechanical Division maintained a standing committee on research made up of five members of the General Committee. This was dropped from the committee list after 1937. Considering the fact that our railway system is made up of independent units, it seems to me that such a committee in the Mechanical Division (I confine my comment to that body) is an appropriate body to assume the responsibility for guiding research pertaining to motive power and rolling stock. If dropping this committee can be construed as an indication of failure on the part of the Mechanical Division to maintain an adequate degree of alertness to its responsibility, let me suggest the probability that the board of directors of the A. A. R. will follow about the same pattern in their support of a central research bureau. For this we have precedent; they did it once before.

Spelvin—I prefer individual responsibility rather than collective effort whenever such pluralistic endeavor seems to meet the realities of the situation, but I am still inclined to doubt that this is the case with a number of highly important technological opportunities which appear to lie before the railroads and are too comprehensive in their benefits and too costly to be undertaken by individual railroads.

"TRANSITION OPPORTUNITIES," the latest postwar study to be published by the N. Y. Journal of Commerce, and now available for distribution, covers some 200 outstanding postwar trade potentialities, new products and services. Designed to aid American industry to bridge the immediate dislocations following V-E day, new peacetime products now in demonstration stages, are described in detail, and particular emphasis is laid on foreign trade possibilities. In the transportation field, all media are discussed. That section devoted to railroads specifically calls attention to the possibility of low-cost sleeper coaches for coast-to-coast travel, and to the new Pullman diner, which was described in the September 2 issue of *Railway Age*. The data for "Transition Opportunities" was prepared through the aid of key industrialists, government and trade association officials. Copies may be purchased from the Journal of Commerce, 63 Park Row, New York 15, N. Y.

Railroads-in-War News

H. J. McCarthy Urges Transport Planning

Tells N.Y.R.R. Club that govt. "top level" knows little about transport

Henry J. McCarthy, formerly associate director of the O. D. T. in charge of the railroad division and now executive assistant to president of the New Haven, addressed the New York Railroad Club at its regular meeting on January 18, taking the place of Colonel J. Monroe Johnson, director of the O. D. T., who was obliged to cancel his address a few days before his scheduled appearance. Mr. McCarthy spoke on Transportation Lessons of the War.

One such lesson, he said, was the constant necessity for continuous, farsighted and comprehensive planning, if transportation agencies are to be prepared to assume the burdens which come their way. He made it clear that he was not speaking only of what is known as "post-war planning," but of planning for war service too. Whether what the future holds is peace or more war, in any case, both the railroads and the "top level" of the national government ought to know in advance what is coming their way, so they may be prepared to meet conditions, whatever they may be.

Govt. Ignores Transport—Mr. McCarthy dwelt on the absence of representation of transportation in the "top level" government councils. The advance military preparations for the present crisis were made without taking into consideration the necessary part that transportation would have to play in the over-all war production program. Plants were located without thought of the necessity for conserving and economizing transportation (although, lately, this fault has to some extent been corrected).

If transportation considerations had been taken into account in the nation's war planning, the speaker went on to say, probably it would not have been necessary to establish the Office of Defense Transportation. Even after this agency was established, however, it was kept in a subordinate status—and the needs of transportation for materials were handled as if the industry were a civilian enterprise. He concluded that the national government should have a transportation department, with its head of Cabinet rank, in order that the government should not proceed in future as it has in the past, planning great enterprises without thought of the transportation ingredient in all of them.

Gormley Is Praised—Colonel E. C. R. Lasher, zone transportation officer, Second

Transportation Zone, Army Transportation Corps at New York, in discussing Mr. McCarthy's address, emphasized another great lesson which has produced such miraculous results in transportation performance in this war, compared to the previous one—namely, co-operation. By co-operation between carriers and the armed forces, congestion around the ports has been avoided; and by co-operation among shippers and between them and the carriers there has developed a maximization of the service extracted from given facilities of necessarily limited magnitude.

Roy V. Wright, managing editor of *Railway Age*, in closing the discussion, praised M. J. Gormley, recently retired executive assistant of the A. A. R., for his foresight in enlisting the collaboration of the military authorities following the previous war, and for his tireless efforts throughout the '20's and early '30's in educating our top military men in the essentials of successful war-time transportation. To Mr. Gormley also must go much of the credit for the establishment of the shippers advisory boards, which have enlisted the same character of understanding co-operation from civilian industry as that achieved by the transportation branches of the armed services.

As direct experience with war-time transportation gave Mr. Gormley the background from which he developed activities now proving of so much value to the railroads, the shippers, and the nation—Mr. Wright suggested that Mr. McCarthy and other young men with experience similar to his in the present war may be expected to have similar transportation lessons to impart to the industry to its profit and that of the nation.

2nd M. R. S. Trains Even Take on Some Civilian Passengers

In a 114-day period of operation, more than 426,000 troops and civilians were transported by train on the lines which fall into 2nd Military Railway Service territory. There were run during that time 311 troop trains, carrying soldiers on leave to and from Paris as well as replacements to the front. These trains carried 313,592 soldiers, of whom 524 were British, 6,441 French, 1,256 Polish and 305,371 American.

Regularly-scheduled trains (for use by civilians as well as troops), and special priority supply trains were run in addition to the troop trains. These trains handled some 16,000 civilians from France, Russia and Poland, and more than 96,880 prisoners-of-war. Headquarters notes that in the case of civilian travel, most of those receiving transportation from the 2nd M. R. S. either were being evacuated from combat areas, or were being returned to their homes from other sections.

Civilian Freight in the East Embargoed

Bad weather leads to A.A.R. and I. C. C. orders for relief of congestion

As a result of sustained severe weather conditions prevailing over much of the territory between the Mississippi River and the Atlantic coast, and at the direction of the Office of Defense Transportation, the Car Service Division of the Association of American Railroads on January 22 issued two embargo orders, Nos. 35 and 37, restricting the movement of civilian freight, both carload and l.c.l., in that territory. These embargoes were set to expire at 12:01 a.m. on January 28.

This A. A. R. action came shortly after Division 3 of the Interstate Commerce Commission ordered Service Order No. 275 to be issued. This order, effective from January 20 through February 19, unless otherwise directed, required railroads operating in the territory affected to reroute freight as required by circumstances, without regard to shipper's routing or ownership of cars, so as to expedite its movement and prevent congestion arising from carrier disability due to weather interference with normal operations.

Whole East Involved—C. S. D. Embargo 35 applied to all carload and l.c.l. freight, with certain important exceptions, consigned, reconsigned or intended for destinations in the United States east or north of a line designated as follows: Lake Michigan; Chicago switching district; the Alton's line from Chicago through Springfield, Ill., to St. Louis; the St. Louis-East St. Louis switching district; Mississippi River, St. Louis to Cairo, Ill.; Ohio River, Cairo to Huntington, W. Va.; the Chesapeake & Ohio line from Huntington to Potomac Yard, Va.; and the Potomac River and Chesapeake Bay thence to Hampton Roads.

Shipments excepted from this embargo were those coming within the following categories: (1) Carload and l.c.l. freight originating within the territory described; (2) Carload and l.c.l. freight originating in Canada, when consigned to embargoed territory through interchange points east of Lake Ontario; (3) Livestock, including live poultry; (4) Fresh and frozen meats; (5) Coal and coke; (6) Shipments consigned direct to ports for export; (7) Commodities loaded in tank cars; (8) Shipments on government bills of lading; (9) Shipments on commercial bills of lading consigned to Army or Navy ordnance plants; and (10) Foodstuffs, drugs and

medical supplies in l.c.l. shipments (not in carloads).

C. S. D. Embargo 37 applied to all bulk grain, including soy beans, originating in the states of Illinois, Indiana, Ohio and Michigan when consigned, reconsigned or intended for destinations east of a line extending through (but not including) Toledo, Ohio, Columbus, and Cincinnati. This embargo carried no exceptions.

Rerouting Order—The commission's service order applied to all railroad common carriers in the following states: Connecticut, Delaware, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan (lower peninsula), New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia and West Virginia, thus covering all of the territory within the limits defined in the C. S. D. embargo, as well as Kentucky and parts of Illinois, West Virginia and Virginia, not embraced in the embargo. Its provisions as to rates applicable, rate divisions, and like matters followed regular commission procedure in carrier disability service orders, with voluntary agreements to be entered into by carriers where no division arrangements are in effect.

It was understood that the necessity for issuing these orders grew out of exceptionally heavy snowfall in recent weeks in parts of the territory affected, particularly in the Niagara frontier and "upstate" New York areas, which resulted in delays in switching and unloading cars, even though special measures were resorted to in an effort to obtain additional manpower for the movement of cars, clearing of switches, faster unloading of freight, and similar activities designed to relieve the situation. As a consequence of prolonged congestion in the areas of heavy snowfall, other cars consigned to such localities had to be held en route, thus further spreading the difficulty and threatening the fluidity of routes normally available for alternate routing when areas of local congestion develop.

While some 300 to 500 servicemen are to be furloughed for two weeks and assigned to nine railroads to aid in the movement of freight in congested Buffalo, N. Y. yards, this assistance likely will fall far short of the railways' needs, a spokesman for the New York Central announced on January 24. The Central, which is mainly affected by the congestion in that area, said that the snowfall in Buffalo thus far this year has totaled 75.6 in. and that this, together with the prolonged severe weather of the past three weeks and the inability of the railroad to secure adequate manpower has contributed largely to the present accumulation.

The railroad also stated that on several other occasions in recent weeks it has employed servicemen at other points where emergencies existed. In Syracuse, where the snowfall has totaled 97 in., and in Rochester, with its 55.5-in. fall, several groups of more than 100 soldiers have been hired for emergency yard work and for snow clearance.

Announcement of the army furlough in the Buffalo area was made January 23, by Lt. Col. John Beirne, executive officer of the western New York military district.

Servicemen thus hired receive the regular rates of pay for the jobs to which they are assigned.

O. D. T. Takes Action—Related to these conditions at Buffalo, though formally attributed merely to a shortage of suitable cars there, and issued upon certification by the Office of Defense Transportation, the commission's Service Order No. 274, effective January 17 through January 31 unless otherwise directed, prohibited railroads serving Buffalo from supplying or moving cars for the purpose of shipping wheat from that point for export or other vessel movement through any north Atlantic port, Norfolk, Va., or north thereof.

As noted in *Railway Age* last week, page 198, O. D. T. Director Johnson previously had written A. A. R. President Pelley, calling attention to "thousands" of freight cars in the storm-affected area that "cannot be moved," and urging the railroads particularly affected to restrict commercial shipments to or through that region, for a 3-day period, to fuel and war materials, to expedite solid block movement of empty cars out of the area, and to "discontinue" passenger train service, where necessary, to keep war traffic moving. The Car Service Division embargoed the movement of coal to Cleveland, Ohio, Erie, Pa., and the Niagara frontier for the period from January 18 to 20, inclusive, while Director Johnson's letter was referred to the Eastern Presidents Conference for consideration.

Few Tank Cars for Asphalt

The Office of Defense Transportation has warned that civilian shipments of asphalt will have to be greatly curtailed in the coming months due to the "critical shortage" of tank cars.

Of the 145,000 tank cars of all kinds now in use, about 12,000 would, in normal times, be used to transport asphalt during the warm months of the year, said A. V. Bourque, director of the O. D. T. tank car division. In the future, not nearly so large a percentage can be spared from the hauling of vital war commodities, it was explained.

1944 Ton-Miles 1.4 Per Cent Above Previous Year

Again in 1944 the railroads handled the greatest volume of freight traffic, measured in ton-miles of revenue freight, for any year on record, according to the Association of American Railroads. In that

	1944	1943	Per Cent Increase
10 months	620,782,907,000	606,538,027,000	2.3
November	59,400,000,000	59,860,574,000	d0.8
December	57,000,000,000	60,614,577,000	d6.0
12 months' total	737,182,907,000	727,013,178,000	1.4

¹ Revised estimate.

² Preliminary estimate.

year it amounted to approximately 737,000,000,000 revenue ton-miles, according to preliminary estimates based on reports received from Class I roads. This was an increase of 1.4 per cent above the previous record established in 1943, when the volume amounted to 727,075,495,000 revenue ton-miles. The volume of freight traffic carried by the railroads in 1944 was an in-

crease of 121 per cent compared with 1939.

The volume of freight traffic handled in December, 1944, alone amounted to 57,000,000,000 revenue ton-miles, a decrease of 6 per cent compared with the same month in 1943.

The accompanying table summarizes revenue ton-mile statistics for the twelve months of 1944 and 1943.

Former Railroaders Serve Y-Force in China

Maj. Frederick A. Hippey, of Roanoke, Va., an engineer on leave from the Norfolk & Western, recently was promoted from the rank of captain at a field artillery center in southwestern China where, for more than a year he has been on duty under Y-Force Operations Staff, which is under the command of Brig. Gen. Frank Dorn. Here Chinese units are trained by American Army instructors in the operation of American pack artillery, which they are furnished. In addition, medical, veterinary and certain technical advisers are sent into the field with the Chinese armies. For his services at this center, Major Hippey is entitled to wear a bronze star on his Asiatic campaign ribbon.

From the China theater comes word also that T/5 Charles W. Leidy, of Inglewood, Calif., who worked for the Union Pacific as a waybill clerk and typist before entering the service, was promoted to corporal in August, 1943, and has been serving as a clerk and warehouseman in the medical section of a base supply depot operated by the Y-Force.

Y-Force personnel are said to have been an important factor in the success of the Salween campaign, getting supplies through to the fighting front by every means at their command—airplanes, trucks, coolies and pack animals.

I. C. C. Service Orders

Two Interstate Commerce Commission Service Orders, Nos. 274 and 275, the latter authorizing rerouting of freight in the area north of the southern boundaries of Kentucky and Virginia and east of the Mississippi River and Lake Michigan, on account of severe weather conditions, and the other prohibiting shipment of wheat from Buffalo, N. Y., for export through North Atlantic ports, are noted elsewhere in this issue.

Effective January 23 through February 22, Service Order No. 276 required the Atlantic Coast Line to route 100 cars daily of Symbol 7G traffic, originating at

Meraux, La., by way of Wadesboro, N. C., Winston Salem-Southbound to Winston Salem, Norfolk & Western to Shenandoah Junction, W. Va., thence by the Baltimore & Ohio to Twin Oaks, Pa.

Amendment No. 1 to Service Order 263, applying more rigid demurrage regulations to loaded tank cars, as noted in *Railway Age* of January 20, page 198, has been

corrected to set forth the intention of the amendment with respect to free time allowed for frozen lading. The limit of 24 hrs. additional free time thus provided will not apply in the case of additional free time allowable under tariffs for inability to unload because of weather conditions, under this correction.

Former So. Pacific Railroader Wins Legion of Merit

The War Department has announced that the Legion of Merit recently was awarded to Lt. Col. Howard G. Hill, of Port Arthur, Tex., a former railway mechanical engineer with the Southern Pacific, who later served as assistant chief, Railway Branch Office of Chief of Engineers, Washington. He is now a patient at Brooke General Hospital, Fort Sam Houston, Tex. The medal was presented to Colonel Hill at a retreat ceremony at a replacement depot, in England, and his citation was for the performance of "outstanding services" in Sicily, where, from August 1 to August 18, 1943, he was general manager of the U. S. Military Railway in the southern part of that country.

It is reported that during the Sicilian campaign, when the Seventh Army "in its final advance" appeared hampered by lack of proper communication lines, Colonel Hill "took charge, put engine repair on a

Africa, as chief of transportation. Following this, he was appointed general manager of the 170-mile military railway in southern Sicily.

Burpee Enthusiastic in Praise of French Railwaymen

The commanding general of the 2nd M. R. S., Brig. Gen. Clarence L. Burpee, formerly A. C. L. terminal superintendent at Jacksonville, Fla., was warm in his tribute to French railroaders, in a recent dispatch from Headquarters, European Theater of Operations. Calling them "co-operative in every respect," the general said he had not had a half-dozen complaints from French workers since he had been on the Continent. "They have stayed on the job from 30 to 40 hours without relief, some of them almost barefoot, some with barely enough clothes on their backs to keep them warm, but not a whimper has been heard."

As examples of French co-operation he told of railway shops in Paris, said to be the largest and best equipped in the country, where French mechanics, aided by a six-man American crew, are servicing American and French locomotives, spoke of the opening of locomotive shops at Cherbourg, and mentioned assignment of interpreters to American-operated trains.

General Burpee further observed that American wounded owe a "debt of gratitude" to French railways for evacuating them in comfortable hospital trains.

Orders Daily Reports of Empty Tank Cars

Daily telegraphic reports as to the location and status of empty tank cars at points of origin have been required, since January 22, by the Office of Defense Transportation from all shippers who, during December, 1944, shipped a total of 186 carloads of liquid commodities by tank car from any

one shipping point. In addition to these reports from shippers, telegraphic reports also are required from the railroads serving them, as to the number of empty cars held by the carriers in railroad yards, or short of destination.

The purpose of the order (Supplementary Order ODT 7 Revised), according to O. D. T. Director Johnson, was to enable the O. D. T. "to determine more satisfactorily just where delays in the movements of tank cars occur, so that steps may be taken to correct the situation." It was made effective simultaneously with Interstate Commerce Commission Revised Service Order 263, which established penalty demurrage rates on loaded tank cars and reduced free time under certain circumstances.

The daily report from each shipper is required to indicate how many loaded tank cars that shipper has released in the preceding 24 hrs.; the number of loaded unbilled tank cars held on his private tracks; the number of empty tank cars—excluding bad order cars—held on his private tracks; and the number of bad order tank cars on hand and carded for repair shop work.

Army's Car-Releasing Record for November, 1944

Only nine per cent of the railroad freight cars placed at large Army freight handling installations in November, 1944, was delayed for more than the 48 hours free time, according to a recent War Department press release. This was two per cent better than the best previous record made in October, 1944, when demurrage accrued on 11 per cent of cars placed.

Because of the "Army's increased efficiency," the press release said, "the nation's taxpayers saved thousands of dollars and the railroads' critically short freight car situation was alleviated."



Lt. Col. Howard G. Hill

sound basis, rehabilitated the water supply, cleared the lines and yards," and, in thus instituting "proper methods of operation," "saved the day for the Seventh Army." It is recorded further that Lt. Gen. George S. Patton, Jr., then commander of the Seventh, personally cited the colonel for accomplishing "an outstanding job" in the rehabilitation of this railway.

Colonel Hill, in World War I, had served in the Motor Transport Corps' shops at Fort Sam Houston. In the present war, prior to his commission overseas, he was chief, in 1942, of the U. S. Mission on Mexican Railways, in Mexico City. In June, 1943, he joined the Special Staff of the 1st Engineer Special Brigade, in North

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since January 9, and which are of interest to railways:

Construction Equipment—Twenty-five items of construction equipment, which formerly could be sold to purchasers other than war agencies only upon specific authorization by W. P. B., may now be sold without this restriction, W. P. B. announced. Order L-192 as amended transfers the 25 items of equipment from Schedule A to schedule B.

Copper Products—Copper wire mills now are required to notify W. P. B. ten days in advance of scheduling orders bearing Z-1 allotments. This action was taken in Direction 60 to CMP-1 which provides for the substitution of Army and Navy orders for such deferred orders. The Army Signal Corps demand will require, for communication wire alone, the fullest utilization of copper wire mill facilities, officials said.

Metal Screen Cloth—Complete control over the distribution of metal insect screen cloth has been established in an effort to meet heavy military demand and to provide for some of the most essential civilian needs. Production is far below combined military and civilian requirements. Military needs have risen sharply during the last two months and exceed current output.

Order L-303 as amended imposes controls on producers and distributors of metal insect screen

cloth and on screen products manufacturers. The order, formerly covering only steel, now applies to all types. Bronze cloth now is available only for the armed services. Producers of metal insect screen cloth may make deliveries only in accordance with schedules authorized by W. P. B. No deliveries may be made on unratified purchase orders.

MRO Supplies Restricted—The following items may no longer be acquired with the assistance of blanket maintenance, repair and operating supplies ratings, according to an amendment to PR-3: Hard rubber drums; incandescent photo flash lamps; photographic papers (sensitized, except blue prints, white prints, ozalid, photostat, rectigraph and other line reproduction papers); metal insect screen cloth; Class D scales, as defined in L-190.

Other changes eliminate sub-items under fire protective equipment on List B and substitute a new item reading: "Fixed or piped extinguishing systems." A further change replaces the phrase "tire retreading, recapping and repair equipment except for recapping or repair of truck tires 8.25 by 20 and larger" with the following: "Tire retreading, recapping and repair equipment including full circle and sectional air bags."

Welding Equipment—Centralized control over preference ratings for new resistance welding equipment has been tightened, by an amendment to L-298.

GENERAL NEWS

Reviving R.R. Credit Hailed by Gen. Ayres

Warns, however, that real restoration awaits par-plus prices for stock

Brigadier General Leonard P. Ayres, well-known economist of Cleveland and economic adviser to the Chesapeake & Ohio lines, sees "good evidence that investors are regaining their old time confidence in the soundness of railroad credit"; but he warns that carrier credit will not be fully restored until new funds can be raised by the sale of stock, and there are few railroads which can do this now.

Several Kinds of Confidence—"A good many other kinds of confidence in the railroads have already been restored," says General Ayres, "but this one is new." His observations are set forth in an article in the February issue of "Tracks," the monthly magazine of the C. & O. lines. Continuing, the economist says:

"The public has come to look on the railroads as the most reliable and safest transporters of passengers. The armed services agree in recognizing the railroads as constituting one of the top essential factors in the waging of war. Now the investors are registering their confidence in the soundness of railroad credit.

"There exists a method by which the confidence of investors can actually be measured. It is done by comparing the market prices of the railroad bonds of the highest quality with those of second-grade bonds having the same maturities and having the same coupon payments. There are always some railroad bonds of the highest grade which are so well secured by the value of the property pledged to insure them, and so well supported by sinking funds, that they are almost riskless in nature. Investors feel complete confidence that their coupons will always be paid when they are due, and that their face value will be paid on or before maturity. . . .

A Gage of Railroad Credit—"Several grades down in the scale of investment quality are the best of the second-grade bonds which the financial services designate with ratings of B1, or BAA, or Baa. These are still good bonds, but they occupy a kind of midway position between the issues of true investment quality and the poorer ones that are somewhat speculative in nature. . . .

"For many years prior to the period of great speculation of the late 1920s, the second-grade railroad bonds sold on the average at prices about 83 per cent as high as those of the best quality issues.

In times of depression they sold at lower per cents than 83, and in periods of prosperity they sold at higher per cents. Those fluctuations furnished a kind of measure of the degree of confidence that investors had in the future of the railroad industry. In times of prosperity they began to feel that the second-grade bonds were almost as desirable as the first-grade issues, and so they bid up their prices. In times of depression they began to worry about the railroads, and so the prices of the second-grade bonds fell further than those of the first-grade issues.

"At the time of the great stock market speculation which ended in a sudden crash of prices in late 1929, many people had too much confidence in the futures of almost all sorts of business. . . . Investors felt so confident about the outlook for the railroads that the market prices of second-grade bonds rose until they were at one time 94 per cent as high as those of the very best issues.

Credit Almost Vanished in '32—In 1930 the Great Depression got under way. . . . By the end of 1932 second-grade railroad bonds were selling for only 31 per cent as much as the highest-grade rail bonds. . . .

"Since 1939 the second-grade bonds have been steadily improving their relative positions. . . . In December of last year the prices of the second-grade bonds had advanced until they were 82 per cent as high as those of the highest-grade issues. This most recent increase carries the relationship back nearly to the old normal one of 83 per cent.

"All this is most gratifying to those who have the best interests of the railroads at heart, but still it is not enough. What the railroads really need most in a financial way is to have their credit status so fully reconstituted that they can once more raise their needed new funds by selling common stock, instead of doing it by going further into debt. They need to earn sufficient income, and to pay enough dividends, so that their common stocks will sell above par. This is far from being the case at present. In December there were only five important railroads in this country that had common stocks selling above par, and the next 30 leading roads had common stocks selling at an average of only 33 per cent of par."

Defer Election of I. C. Head

Directors of the Illinois Central, meeting at Chicago on January 19, decided to defer the election of a president to succeed John L. Beven who died on January 3. R. E. Connolly, vice-president—accounting and secretary and treasurer, will continue as officer in charge of properties. The next scheduled meeting of the board is February 16.

Fiscal 1944 Report of Mediation Board

"By and large" labor's "no strike" pledge has been observed, it said

Presumably on the theory that near ones didn't count that year, the National Mediation Board's latest annual report was able to characterize the fiscal 1944 period, which saw the nationwide strike threat bring on War Department operation of the railroads, as a time when "by and large," the no-strike pledge of the [labor] organizations . . . was observed." The report for the 12 months ended June 30, 1944, has been submitted to Congress.

As Good as a Mile—The crisis of December, 1943, was covered in the report with a chronological listing of developments which led to the strike threat, the President's action in taking over the roads, the settlement of the wage controversies, and the return of the roads to private operation on January 18, 1944. Among the dates listed was December 20, 1943, when N. M. B. had scheduled mediation meetings with the operating employees; but the fact that these scheduled meetings were never held was merely implied, for the next date listed is December 27, 1943, when the President issued his federal-control order.

Reports at the time indicated that the December 20, 1943, meeting scheduled by N. M. B. had been called off at the request of the White House when the President intervened in the controversy. And this and other previous actions reflecting the Administration's disposition to supplant N. M. B. in railway wage proceedings were understood to have been a factor in the resignation of Dr. William M. Leiserson, former chairman of N. M. B.

Promise Just Slightly Broken—The commendation of labor for its "by and large" observance of the "no-strike" pledge was based on the board's finding that during the year under review "the vast majority of labor disputes in the rail and airline industries were composed peaceably under the provisions of the Railway Labor Act," i. e., "aside from a few local work stoppages of the 'wildcat' variety," and an "authorized strike of nonoperating employees" on "one small railroad in southeastern territory." The operation of the latter "was not seriously interrupted," a settlement having been effected "through the efforts of one of the board's mediators."

The report emphasized what it called the board's "urgent need for additional force, both in the field and in the office staff." It noted the continuing increase in the number of applications for the board's services,

mentioning also the pending national movements of employees for overtime pay adjustments and more liberal vacations. Also noted was the growth in representation disputes between rival unions.

Strike Threats to Get Action—The increasing backlog of unsettled cases has given the board the "greatest concern," and it has also caused "much concern and discontent among the organizations and carriers." The board makes a general attempt to handle applications for its services in the order of receipt, but the report complained that some unions are finding the strike threat a short cut to disposition of cases in which they are interested. "There has," it said "been a tendency on the part of certain organizations to threaten strike action on certain issues without first exhausting all mediatory provisions of the law, with the expectation of securing immediate mediatory services by such action."

Representatives of the Railway Labor Executives' Association have met twice with the board "urging the necessity for a substantial increase in the board's staff looking toward more prompt handling of its work." The inability to handle cases promptly, the report said, "is not a healthy situation"; and it indicates to the board that the Railway Labor Act (so often cited as the "model law governing the handling of labor difficulties") is now "in real danger of breaking down due to the inability of the board to cope with the large volume of work with its present force."

During fiscal 1944 the board disposed of a total of 413 applications for its services, including 357 docketed applications and 56 applications closed through correspondence. In the latter connection the report explained that at the beginning of the year under review the board instituted the practice of investigating all applications for its services, "with the view of developing all pertinent information prior to docketing, thus saving the time of its mediators in the field." Thus the 56 applications closed without being formally docketed.

351 Unsettled Cases—The total of 413 cases disposed of in fiscal 1944 compared with 425 during the previous year, the decrease having been due to illness among the board's field forces, and "a very large representation election which consumed the entire time of five mediators for over two months." The board ended the fiscal year with a backlog of 351 unsettled cases, the largest number since 1934.

The section of the report devoted to National Railroad Adjustment Board activities revealed that referees were appointed during the fiscal year for 640 deadlocked cases, as compared with 632 during the fiscal 1943. The Adjustment Board's First Division, as the report put it, "continued its past record of failing to select a single referee to sit with it in the consideration of all deadlocked cases." N. M. B. had to make the appointments, as it did with respect to all referees required by the Fourth Division. The Third Division selected its own referees in one-third of its deadlocked cases, as compared with two-thirds in the previous year. The Second Division agreed on a referee (Dr. I. L. Sharfman) to whom all its deadlocked cases were referred. Dr. Sharfman served 76 days at \$50 per day.

collecting a total of \$3,800, the highest amount paid during the year to any individual serving as referee.

December Operating Revenues Down 3.3 Per Cent

From preliminary reports of Class I roads representing 80.8 per cent of total operating revenues, the Association of American Railroads has estimated that the December, 1944, gross totaled \$611,147,921, a decrease of 3.3 per cent under the \$631,709,270 reported for December, 1943. Estimated December freight revenues were \$449,328,319, compared with \$461,120,139, a decrease of 2.6 per cent. Estimated passenger revenues were \$117,190,213, compared with \$122,980,739, a decrease of 4.7 per cent.

Freight Forwarder Insurance

Upon petition of the Freight Forwarders Institute, the Interstate Commerce Commission, by Commissioner Lee, has postponed to April 2 the effective date of its order in Ex Parte 159 prescribing certain rules governing the insurance practices of forwarders, noted in *Railway Age* of December 16, 1944, page 935. The basis of the petition was that additional time was essential to obtain physical compliance with the order by the membership of the institute, in view of the necessity of completing negotiations with insurance companies to obtain uniform arrangements, particularly with respect to bodily injury and property damage provisions where trucks are operated in collection and delivery service.

No Mechanical Division Meeting in 1945

In view of the present status of the war emergency and the request of the Office of Defense Transportation that all conventions not absolutely necessary to the war effort be deferred, it has been decided not to hold an annual meeting of the A. A. R. Mechanical Division or the Electrical Section of the Mechanical Division during the year 1945. Executive Vice-Chairman V. R. Hawthorne, in making this announcement, stresses the importance of no letup, but, in fact, increased attention to matters concerning safety and equipment maintenance. He says that arrangements will be made, as in the case of previous non-meeting years, to carry on the various activities of the Division relating to these and other important matters by means of correspondence supplemented by such group and committee meetings as may be necessary.

Propose Lower Rates for Higher Carload Minima

Shippers of certain commodities have been invited by the railroads in Official Classification territory to attend a hearing at the Palmer House, Chicago, beginning on February 6, to express their views on a proposal to establish rates 10 per cent lower than present rates on domestic shipments of higher specific carload minimum weights of those commodities moving within that territory.

The object of this modification of rates is to encourage heavier loading of cars. The proposal contemplates that the higher

carload minima and reduced rates connected therewith will alternate with existing carload minima and rates; that they will not be subject to Rule 24 of the Consolidated Freight Classification or the provisions of sections 2 and 6 of Rule 34; that they will apply only on shipments loaded in standard box, open-top and refrigerator cars as described in the classification (minimum weights to be graduated upwards for cars larger than standard); and that shipments moving under such lower rates and higher minima will be entitled to not more than one stop-off in transit to complete loading or for partial unloading.

The commodities involved, and the proposed minima to which the modifications would be applicable, are as follows: Butter and cheese, 50,000 lb.; canned goods, canned milk and canned meats, 70,000 lb.; cured meats, 70,000 lb.; green salted cattle hides, 70,000 lb.; soap and washing compounds, 70,000 lb.; manufactured iron and steel articles, 100,000 lb.; alcoholic liquors, 80,000 lb.; cigarettes, 70,000 lb.; peanuts, 50,000 lb.; and printing paper, building and prepared roofing paper, wrapping paper and related articles, 70,000 lb.

"First Expressman" Honored on Centennial of His Death

On January 14, on the occasion of the 100th anniversary of the death of William Frederick Harnden, known as the "original expressman," a group of Railway Express Company representatives made a pilgrimage to Mount Auburn, in Cambridge, Mass., and laid a memorial wreath at the foot of the 30-ft. monument which marks his grave.

It was William Harnden who, in 1839, at the age of 26, started the express business, traveling four times weekly between New York and Boston carrying parcels in a haversack. Hampered always by ill health he died at 31, but by then had expanded his business to include Philadelphia, as well as a number of offices abroad. Among his "express shipments" to the United States were over 100,000 emigrants desiring admission, and whom he saw through to regions where, in the early 'Forties, labor was in demand for railroad construction.

Senate Gets Reed's Pooling Bill Again

Senator Reed, Republican of Kansas, has again introduced in the Senate his proposed amendment to the Interstate Commerce Act's section 5 to give the Interstate Commerce Commission authority to require the pooling of railroad revenues derived from general rate increases. It is S. 336.

Mr. Reed has also introduced S. 337, to amend the Interstate Commerce Act to permit joint action by common carriers in connection with procedures related to the establishment of rates and the taking of other action. Like H.R. 167 introduced previously in the House by Representative Bulwinkle, Democrat of North Carolina, this Reed bill would give legal sanction to carrier rate bureaus operating under I. C. C. regulations.

An omnibus rivers and harbors bill (H.R. 1577) has been introduced in the

House by Chairman Mansfield of the committee on rivers and harbors; while another superhighway bill (H.R. 1700) has been introduced by Representative Snyder, Democrat of Pennsylvania. S. 356 has been introduced by Senator Cordon, Republican of Oregon, to amend Part II of the Interstate Commerce Act to provide a limitation on the time within which actions may be brought for recovery of undercharges and overcharges by or against motor carriers.

Senator O'Daniel, Democrat of Texas, has introduced S. 368 to prohibit the use of any pipe line constructed under the act of July 30, 1941, for the transportation or distribution of natural gas. Also, there have been introduced additional proposals to terminate daylight saving time and to prohibit discrimination in employment because of race, creed, color or national origin.

Miller Protests "Confusion" in I. C. C. Motor Decisions

Protests against the "confusion" which he thinks will result from the majority reports were embodied by Commissioner Miller in dissenting-in-part expressions accompanying two recent decisions of the Interstate Commerce Commission's Division 4 in motor transport cases. In both cases—No. MC-F-2374 and No. MC-F-2655—the majority reports represented the view of Commissioners Porter and Mahaffie.

In No. MC-F-2374, the Rock Island Motor Transit Company and its parent railroad, the Chicago, Rock Island & Pacific were, in turn, conditionally authorized to purchase, and acquire control of, certain operating rights of Mohawk Freight Lines and the Remmers Truck Line. The rights involved are over Kansas routes, including those between Herington and Wichita, Wichita and Hutchinson, and Topeka and McPherson.

Doesn't Know What It Has Bought—In acting favorably on the Rock Island applications, the majority attached the usual condition requiring that trucking services performed on the routes acquired be limited to those which are auxiliary to or supplemental of Rock Island train service. Also, there was that other familiar condition that the authority granted "shall be subject to such further specific conditions as we, in the future, may find it necessary to impose in order to restrict applicant's operations to service which is auxiliary to, or supplemental of, rail service."

Commissioner Miller would "clarify the finding" by providing in the first condition that all shipments by Transit must move at railroad rates and on railroad bills of lading. The majority's action reserving the right to impose further conditions was in his opinion "undesirable as an indication that we may hereafter deprive applicant of certain properties which we now authorize it to purchase." Continuing, Mr. Miller asserted that all necessary conditions should be imposed now, "in order that the carriers may know the circumstances under which they may consummate the transaction, without fear of having the rights which they acquire later taken from them."

He added that "the confusion surrounding the problems here involved are not lessened by the majority report"; carriers, shippers, and the public "are entitled to a report which is free of uncertainty."

In No. MC-F-2655 Mr. Miller protested that the majority report was "wholly inconsistent with recently decided cases" when it applied to the case in hand that rule of *Refiners Transport & Term. Corp.—Purchase—Marshall*, 39 M. C. C. 271, which stipulates that non-carrier parent corporations of motor carriers must become parties to applications wherein their carrier subsidiaries are seeking commission approval of plans to acquire rights and property of other highway carriers. The case involved the joint application of Standard Freight Lines, Inc., and Bates Motor Transport Lines, Inc., for authority under section 5 to merge the operating rights and properties of the latter into the former; and the supplemental application of Harry F. Chaddick, who controlled both Standard and Bates, to acquire control of the operating rights and property of Bates through the merger.

Inconsistencies Noted—In approving the transaction, subject to specified conditions, the majority also acted favorably on the Chaddick application, holding that his application was required under the *Refiners* case rule. The majority also cited *Atchison, T. & S. F. Ry. Co.—Control—Santa Fe Trail Transp.*, 15 M. C. C. 469, 471, noting that the commission there decided "that where a railroad controlled a motor carrier indirectly through a subsidiary company, it was necessary that such railroad secure our approval and authorization for its acquisition of direct control through elimination of the subsidiary in the chain of control."

In holding that Chaddick was "a necessary party applicant," the majority noted that although he already controlled both carriers involved, "such control is, at present, exercised over separate entities, and the proposed merger would result in a change in the form of that control through unification of the properties in Standard."

Further Confusion—In addition to being "wholly inconsistent" with other recent decisions, as noted above, the majority view further appeared to Mr. Miller as something which "serves to confuse the law and to increase the uncertainty of interested parties as to proper procedure." The recent decisions he had in mind were in No. MC-F-2316, *Industrial Transport, Inc.—Lease—Vern R. Jenks*, decided March 25, 1944, and in No. MC-F-2459, *Sharon Investment Company—Control; Pratt's Express Company—Purchase—Security Warehouse Company*, decided July 5, 1944.

As Mr. Miller reads these decisions, they "specifically interpreted the principle of the *Refiners* case as being not applicable to a situation such as is here under consideration." He insisted that the transaction involved could not result "in Chaddick acquiring control of Bates since, as the report clearly states, he already has control over that carrier." Neither was Mr. Miller expressed with the majority's citation of the *Santa Fe* case. He pointed out that it was decided "five years before the *Refiners*

case," adding that the principle enunciated by the latter "was not then being applied in acquisition proceedings and, therefore, could not have been considered."

Rise in Rail and Pullman Military Traffic Forecast

Military traffic of the Pullman Company and the railroads, and problems involving military movements and essential civilian transportation will probably increase this year as the tempo of war rises, according to a statement issued by David A. Crawford, president of Pullman, Inc. The Pullman Company, last year set a record in business volume for the company's 80 year history, he said, having carried 36 million military and civilian revenue passengers 28½ billion passenger-miles.

"Cold statistics seldom are impressive, but when one considers that the passenger mileage in 1944 was nearly double that for any peace-time year—14 billion 407 million in 1925—the record takes on real significance," the statement said. "Military movements figured prominently in the traffic. More than 8,360,000 members of the military services were transported in Pullman cars in special trains and special cars. About half of all cars in the Pullman fleet are employed in this service."

Mr. Crawford said the achievements of the Pullman company last year were the result of intensified use of the established Pullman system of operating sleeping cars as a nationwide pool under centralized control, and more efficient work by the employees who overcame the handicap of equipment shortages by intensifying their efforts.

Hearing in Staley Case

Having reopened its I. & S. No. 4736 and related proceedings for further hearing, as noted in *Railway Age* of October 21, 1944, page 630, the Interstate Commerce Commission has fixed April 19 for this hearing before Commissioner Patterson at the Morrison Hotel, Chicago. The purpose of the further proceedings is to receive evidence as to changes in conditions affecting switching and spotting operations at the Decatur, Ill., plant of the A. E. Staley Manufacturing Company since the commission ordered the roads involved to collect a car spotting charge for services rendered this industry.

Personnel Needs Still High

Personnel needs of the railroads continue in excess of 90,000 persons according to the December 1 summary of the Railroad Retirement Board. At that time 186 railroads, including 85 per cent of the Class 1 railroads which employ 74 per cent of the employees in the industry, and some of the smaller railroads, reported needs of 90,949 persons and surpluses of 134 employees. In this total of needs were 49,774 laborers, baggage, express and freight handlers, 13,960 skilled trades journeymen, 13,565 skilled trades helpers and apprentices and 7,731 trainmen and enginemen.

The greatest shortage of manpower, 20,854 persons, exists in Wisconsin, Michigan, Illinois, Indiana, Ohio and Kentucky. Washington, Oregon, California, Nevada and Arizona are second with 17,157;

Kansas, Missouri, Oklahoma, Arkansas, New Mexico, Texas and Louisiana are third with 15,954; Maine, Vermont, New Hampshire, Massachusetts, Connecticut, New York, Rhode Island, Pennsylvania and Delaware are fourth with 14,439; Montana, North Dakota, Minnesota, Idaho, Wyoming, South Dakota, Utah, Colorado, Nebraska and Iowa are fifth with 12,059; and West Virginia, Maryland, Virginia, North Carolina, Tennessee, Mississippi, Alabama, Georgia, South Carolina and Florida are sixth with 10,486.

Freight Car Loading

Loadings of revenue freight for the week ended January 20 totaled 777,320 cars, the Association of American Railroads announced on January 25. This was a decrease of 5,067 cars or 0.6 per cent below the preceding week, a decrease of 21,330 cars or 2.7 per cent below the corresponding week last year, and an increase of 74,026 cars or 10.5 per cent above the comparable 1943 week.

Loading of revenue freight for the week ended January 13 totaled 782,387 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, January 13	1945	1944	1943
District			
Eastern	146,377	153,424	144,610
Allegheny	166,822	172,749	158,976
Poconantas	54,973	56,785	54,028
Southern	125,102	118,558	122,219
Northwestern	85,889	90,370	82,320
Central Western	130,513	124,093	122,706
Southwestern	72,711	63,552	70,639
Total Western Districts	289,113	278,015	275,665
Total All Roads	782,387	779,531	755,498
Commodities			
Grain and grain products	46,678	57,442	53,307
Live stock	17,922	17,156	14,572
Coal	173,977	183,620	165,815
Coke	13,746	15,463	15,314
Forest products	38,954	37,742	42,374
Ore	11,180	13,404	14,365
Merchandise I.C.I.	100,042	98,891	86,692
Miscellaneous	379,888	355,813	363,059
January 13	782,387	779,531	755,498
January 6	682,967	769,629	717,176
December 30	584,757	643,444	643,444
December 23	762,449	749,883	758,881
December 16	749,883	758,881	758,881
Cumulative Total, 2 Weeks	1,465,354	1,549,160	1,472,674

In Canada—Carloadings for the week ended January 13 totaled 65,017, as compared with 49,907 for the previous week, and 68,225 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada	Total Cars Loaded
Week ended Jan. 13, 1945	65,017
Week ended Jan. 15, 1944	68,225
Cumulative Totals for Canada	
January 13, 1945	114,924
January 15, 1944	130,636

M. & St. L. Improvements

Improvements to the physical properties and the financial structure of the Minneapolis & St. Louis will place this road in a favorable post-war position, according to L. C. Sprague, president. Mr. Sprague pointed out that the company redeemed its entire bonded indebtedness last year, in addition to which it has made considerable expenditures for additions and betterments,

placing the road in "excellent physical condition."

"This railway has been discounting bills since May, 1936," he said. "We have ballasted 509 miles of track with from 12 in. to 14 in. of washed gravel and crushed rock and increased the length of side tracks to 100 cars, while some yard tracks have been increased to hold 200 cars.

"New ties have been placed in main lines, we are replacing all 85-lb. rails with 100-lb. rails; and relaying branch lines with the 85-lb. rails so removed.

"This fall," Mr. Sprague continued, "the board of directors authorized the purchase of two 4,050-hp., Diesel-electric road freight locomotives at an aggregate cost of \$708,000; four 1,000-hp. combination road and switching locomotives at an approximate cost of \$87,000 per unit; 500 new 50-ton all-steel box cars at a cost of approximately \$1,800,000, and some other items of equipment."

More Advertising by Railroads Is Forecast

Intense competition in the future will necessitate an expansion and intensification of railroad advertising if the railroads wish to keep pace with airlines and highway carriers in the struggle for freight and passenger service, it was concluded at a meeting of the Executive Committee of the American Association of Railway Advertising Agents held at Chicago on January 20 in lieu of the annual meeting which had been scheduled at St. Paul, Minn., on that day. Officers elected for the ensuing year are: President, H. W. Frier, director of public relations of the Chicago & North Western; first vice-president, A. A. Dailey, general advertising manager of the Atchafalaya, Topeka & Santa Fe; second vice-president, S. E. McKay, advertising agent of the Baltimore & Ohio; treasurer, A. W. Eckstein, advertising agent of the Illinois Central; secretary, E. A. Abbott, re-elected; and assistant secretary, C. D. Perrin, sales executive of Poole Bros., Inc.

One of the subjects on the docket was institutional advertising which the railroads have been using since competitive advertising has been ruled out for the duration. Those present were of the opinion that institutional advertising should be continued after the war but that the budgets for freight and passenger advertising should not suffer as a result and that in accounting institutional advertising be charged to account 460 rather than to account 353.

Joint railroad advertising was considered to be an effective means of presenting a united front against air and highway competition but it was felt that the advertising of the services and attractions in the territory of individual railroads will continue to be effective. Experience, the discussion disclosed, has shown that the circulation by railroads of literature and pictures of attractions in the territory served by railroads, even though used by other forms of transportation in the solicitation of business, have reacted to the advantage of the railroads.

A "Victory Vacation Year" program sponsored by the National Association of Travel Officials was described by Garth Cates, travel director of Scripps-Howard Publications. The Association, he said, is

endeavoring to enlist all businesses—retail merchants and manufacturers of travel accessories and all forms of transportation—in the promotion of travel after the war with a view to stimulating business. One idea that has been suggested, he said, in two vacations a year, two weeks in the summer and two in the winter. For each one million employees given two vacations, he said, 100,000 or 10 per cent more persons would be employed. Another travel plan which is being advocated will encourage the two million high school students in the country to travel 10,000 miles each as part of their education.

April 17 Hearing on AB Brakes

Upon the request of the Association of American Railroads, a hearing on the Interstate Commerce Commission's No. 13528 proceedings, concerning the application of power brakes to freight cars, has been set for April 17 at the Morrison hotel, Chicago, before Commissioner Patterson. In making this announcement for the commission, Secretary W. P. Bartel added that the last day for filing briefs in this proceeding has been postponed from January 31 to a date yet to be fixed.

As noted in *Railway Age* of October 28, 1944, page 668, a prehearing conference in this proceeding was held in Chicago during the fall, growing out of a July 29, 1944, show cause order served on the railroads requiring returns to the proposal that installations complying with certain specifications made by the commission should be completed by January 1, 1946. The annual report of the commission's Bureau of Safety for the fiscal year ended June 30 last called attention to the fact that on that date 45.4 per cent of freight cars used in interchange service had been fitted with "standard" brake equipment.

Wallace for Jones

President Roosevelt this week sent to the Senate his appointment of former Vice-President Henry A. Wallace to be Secretary of Commerce, succeeding Jesse H. Jones, the President having asked Mr. Jones to relinquish the post to make way for "Henry," who "deserves almost any service which he believes he can satisfactorily perform" because of the "utmost devotion to our cause" that he displayed in the campaign. And "Henry" wanted the Commerce post, which carries with it direction of the various government lending agencies such as the Reconstruction Finance Corporation and its subsidiaries.

In replying to the President's letter requesting his resignation, Mr. Jones took issue with Mr. Roosevelt's appraisal of Mr. Wallace as one "fully suited" for the position to which he was being appointed. The appointment started a movement in Congress to divorce the lending agencies from the Department of Commerce before bringing Mr. Wallace's name before the Senate for confirmation. The bill of divorcement has been introduced by Senator George, Democrat of Georgia. It is S. 375, on which the Senate committee on commerce began hearings this week, meanwhile deferring consideration of the Wallace nomination.

If confirmed as Secretary of Commerce,

Mr. Wallace would presumably bring to that position the railroad views expressed in his October 20, 1943, Dallas, Texas, speech, which charged the carriers with bringing public transport under monopoly control and fostering monopoly in industry. The speech was reported in the *Railway Age* of October 23, 1943, page 657; in general, it echoed charges then being made by the Department of Justice's Antitrust Division in its build-up of the antitrust complaint subsequently filed at Lincoln, Nebr.

Roosevelt Endorses Rail Unions' Social Security Bill

President Roosevelt has endorsed the program of the Railway Labor Executives' Association for liberalizing amendments to the Railroad Retirement Act and Railroad Unemployment Insurance Act. The endorsement came in letters sent by the President this week to Chairman Wheeler of the Senate committee on interstate commerce and Chairman Lea of the House committee on interstate and foreign commerce, the letters urging the committees to "take the necessary steps as soon as possible" to hold hearings on pending bills to carry out the program.

As noted in the *Railway Age* of January 20, the bills are S. 293, sponsored by Senators Wheeler of Montana and Wagner of New York, Democrats, and H.R. 1362, sponsored by Representative Crosser, Democrat of Ohio.

Says It's Time to "Re-examine"—Except for the designation of the Senate and House bills, the President's letters to Messrs. Wheeler and Lea were identical. The letter to Chairman Wheeler read as follows:

"As you know, I have been for many years interested in the development of the Railroad Retirement and Railroad Unemployment Insurance Acts. I realize, as I am sure you do, that our early social insurance legislation, as is true of most ventures in new fields, needs to be reexamined from time to time in order to make sure that the provisions operate in practice so as effectively to carry out those beneficial purposes which all of us wish to see accomplished.

"S. 293, now before your committee for consideration, represents the results of a study, over a period of several years, of the operations of the Railroad Retirement and Railroad Unemployment Insurance Acts which was made by the Railway Labor Executives' Association, representing the great bulk of railway workers, and the Railroad Retirement Board.

"This study has included an analysis of many thousands of suggestions made by railroad workers and their local organizations. Many proposals were, of course, rejected; what remains represents an effort to make these railroad insurance systems function more effectively.

"I am told by the chairman of the Railroad Retirement Board that preliminary drafts of the bill were widely circulated to all groups in the industry in 1942 and 1943. Two bills, the major provisions of which were substantially the same as S. 293, were introduced in the recent session of the Congress, one of them as early as last May. There has therefore been ample opportunity

for all interested groups to study the proposals; and all those involved should by now be fully prepared to state their views.

Wants Prompt Action—"I am heartily in favor of the objectives of S. 293 and I hope the Congress will see fit to act favorably on those objectives. May I ask that your committee take the necessary steps to hold hearings on the bill as soon as possible?"

The labor organizations' effort to put the program over in the previous Congress was stalled when the House committee voted on August 30, 1944, not to resume hearings which were suspended after May and June sessions at which Chairman Murray W. Latimer of the Retirement Board explained provisions of the previous Crosser bill. The latter proposed a new Railroad Social Insurance Act which would have embodied the present retirement and unemployment insurance acts and the liberalizing amendments. This codification plan has now been dropped, only the liberalizing amendments being proposed in the new Crosser and Wagner-Wheeler bills.

Dissension Among the Brothers—The January 20 issue of "Labor" hailed the introduction of the bills and stated that an R. L. E. A. committee headed by President D. B. Robertson of the Brotherhood of Locomotive Firemen & Enginemen was "on the job in Washington seeking to progress the measures through Congress as rapidly as possible." It went on to charge that President A. F. Whitney of the Brotherhood of Railroad Trainmen "is continuing to play the game of the railroad lobby with intemperate attacks upon the amendments." Mr. Whitney was further charged with having done "the same thing during the last session," when "he carried the ball for the carriers by fighting for delay."

"Significantly," the article continued, "lobbyists for the carriers are now comparatively silent about the amendments, apparently counting on Whitney to lead the onslaught for them."

Emergency Board Reports

The White House has made public reports made recently to President Roosevelt by emergency boards which investigated disputes on the Seaboard Air Line and the Lake Terminal.

The board which investigated the dispute on the Seaboard was appointed by the President on December 14, 1944, after a strike had been set for noon on the 15th by the Brotherhood of Locomotive Firemen & Enginemen. The dispute involved that union's protest against arrangements whereby the concurrence of the Brotherhood of Locomotive Engineers was required before a dismissed engineer would be reinstated.

The board recommended that the reinstatement procedures be modified so that in all cases involving discharge or suspension of enginemen, the matter be handled jointly to a conclusion by the two brotherhoods without either having power of veto of the cases originating within the other. The White House announcement stated that the President had "expressed the earnest hope that the dispute between the two brotherhoods would be speedily

adjusted in accordance with the recommendations of the emergency board." Members of the board were Houston Thompson, Washington, D. C., attorney; David J. Lewis, former member of the National Mediation Board; and Major General William H. Tschappat, retired.

The dispute on the Lake Terminal involved a request of employees that the management sign a collective bargaining agreement. Here the emergency board was appointed from the National Railway Labor Panel by Panel Chairman H. H. Schwartz. The members were Richard F. Mitchell, former justice of the Supreme Court of Iowa; Dr. A. G. Crane, former president of Wyoming State University; and Walter Gilkyson, attorney of New Hartford, Conn. The White House announcement said that the board had brought about a settlement, which resulted in the signing of an agreement covering representation matters and working rules.

Mason City-Fort Crook Rate on Brick Splits I. C. C.

In order to reach its recent decision in a case involving the carload rate on common brick from Mason City, Iowa, to Fort Crook, Nebr., the Interstate Commerce Commission had to call for the vote of Commissioner Johnson, who does not ordinarily participate in such commission proceedings because of his duties as director of the Office of Defense Transportation. Commissioner Johnson's vote produced a six-to-five decision.

The decision was the commission's report on reconsideration of the No. 28961 proceeding; and it affirmed the prior report's finding dismissing the complaint of the Mason City Brick & Tile Co. The complainant assailed the 14-cent rate on common brick from Mason City to Fort Crook as unreasonable in view of the 11-cent rate in effect between Mason City and Omaha and South Omaha. It sought the 11-cent rate and reparations.

The commission pointed out that the 11-cent rate was established to meet truck competition, and that "it is well settled that a rate reduced by competition is not the proper standard by which to measure a reasonable maximum basis." Moreover, the ton-mile revenue under the assailed 14-cent rate was found not excessive.

Commissioner Aitchison filed a dissenting expression to which Commissioners Porter and Splawn subscribed; and Commissioner Alldredge filed a dissenting-in-part expression to which Commissioner Mahaffie subscribed.

Approves Lease of Stock Yard's "Carrier" Facilities

An arrangement under which the New York Central will lease and operate certain property of the Cleveland Union Stock Yards Company at Cleveland, Ohio, used for loading and unloading livestock, affording other roads serving that point access to such facilities under an agreement providing for a proration to each, on a per deck basis, of the annual rental expense, has been approved by Division 4 of the Interstate Commerce Commission.

As the division noted in its report, the transaction will not bring about any change

in the handling of livestock at Cleveland. It will end a "dispute of long standing," arising from the applicability to the stock yard operator of Interstate Commerce Act provisions applying to "carriers," and reaching the status of a dilemma when the company set up to operate these facilities obtained authority to abandon them. In granting this authority, the commission had stipulated that either the carriers or the stock yards operator would have to make some arrangement to continue to perform the service provided by these facilities, and the present arrangement is the outcome of subsequent negotiations.

Eastern Car Foremen Elect New Officers

At the annual meeting of the Eastern Car Foreman's Association, held on January 12 in the Engineering Societies building, 29 West 39th street, New York, the following officers were elected for the coming year: President, K. H. Carpenter (superintendent car department, Delaware, Lackawanna & Western); 1st vice-president, G. H. Massy (superintendent, motive power, Central of New Jersey); 2nd vice-president, P. J. Hogan (superintendent car inspection and maintenance New York, New Haven & Hartford); treasurer, T. G. Case (general car foreman, Grand Central terminal, New York); and secretary, Wilson P. Dizard (American Car & Foundry Co.).

C. L. Heater, vice-president of engineering, American Steel Foundries, will discuss "Progress of High Speed Freight Car Trucks" when this group next meets at the same address, February 9.

Convention Committee Refuses Many Meeting Permits

The War Committee on Conventions, of which Colonel J. Monroe Johnson, director of the Office of Defense Transportation, is chairman, had approved only two applications for permits to hold meetings to be attended by more than 50 persons, out of 110 considered by it up to January 22. One permit was issued to the American Red Cross in connection with regional meetings preliminary to its next fund-raising campaign, while the other was for a war fund organization meeting at Raleigh, N. C., to be attended by 65 persons.

Among organizations refused permits were trade associations, medical, banking, agricultural, professional, government employee, religious, fraternal, recreational, and social groups, the committee disclosed. Those named were predominantly state or local organizations, but included also the American Management Association, National Industrial Conference Board, National Canners Association, School and College Conference on English, National Farm Institute, American Astronomical Society, and National Association of Chiefs of Police. Local meetings denied permits included the Bridgeport (Conn.) Traffic Association and the Charlotte (N. C.) Traffic & Transportation Club.

Suburban Travel O. K.—In addition to the general exemption permitting meetings of 50 persons or less, Colonel Johnson announced that purely local meetings,

using only city or suburban transit facilities and requiring no hotel sleeping accommodations, may be held without committee permit, even if more than 50 persons attend. This exemption was extended to rural areas by interpreting the transit facility clause to apply to the normal trading area of the point of assembly.

Such exemptions, it was emphasized, were not to be interpreted as constituting approval of any gathering, even though its size does not make it subject to the permit requirements, unless it "demonstrably" will further the war effort.

In this connection, Colonel Johnson on January 19 made public a denial of a newspaper report, said to have originated in Miami, Fla., to the effect that a permit had been given the American Legion (of which Colonel Johnson formerly was an officer) for a national convention to be held this year in Miami. The committee, he said, had not received an application from the Legion, and "very definitely has not approved the holding of such a convention."

Canadian Industrial Traffic Men to Meet February 7-8

The 29th annual convention of the Canadian Industrial Traffic League is to be held February 7-8, at the Windsor hotel, Montreal.

S. R. Noble, general manager of the Industrial Development Bank and Sugar Administrator for Canada will be guest speaker, and will be introduced by the League's president, William Ferguson, who is traffic manager of Colgate-Palmolive-Peet Co., Ltd., in Toronto.

Committees will report on air transportation, bill of lading, car demurrage and storage, claims and claim prevention, container standards, customs, highway transportation, inland waterways, rate construction, tariffs and classification, finance and management, post war planning, Transport Controller's orders, and kindred subjects. The Canadian League has a nationwide membership of about 500, with divisions functioning in Quebec, Ontario, Manitoba and British Columbia.

Free Capital to Competitors Undermines Railroads

The nation's railroads cannot be expected to grow and flourish in the future under a policy requiring them to pay their own way while competing transportation is heavily subsidized with public funds, Thomas Balmer, vice-president of the Great Northern, declared in an address before the annual meeting of the Northwest Shippers Advisory Board at St. Paul, Minn., on January 25. He drew attention to the railroads' function as the main reliance of the nation for transportation in peace and war, and their long history of improving service at declining rates.

"Certainly," said Mr. Balmer, "an instrument of such reliability and such utility is entitled to primary consideration in the planning of the nation's post-war economy, and the public should not allow the traffic which sustains the railroads to be diverted to other systems of transportation which cannot exist except with the aid of public subsidies."

The speaker referred to "the flood of proposals in this country to create prosperity for everyone after the war by immense expenditures of public money." Many of these, he said, have "envisioned super-systems of highways, airways and waterways, to be built at public expense and maintained wholly or in part at public cost."

These proposals assume, Mr. Balmer continued, that "in some vague and indefinite way" these super-systems "will so improve the public welfare and increase the national income that, somehow in the end all the bills will be paid and nobody will feel the pain. We need someone with the homely philosophy and simplicity of expression of an Abraham Lincoln or a Will Rogers to puncture these imaginative balloons and show us what a poor shriveled residue remains after the air is let out."

The only ultimate result of the present line of "planning", he asserted, can be repudiation of the public debt or debasement of the currency. In either case, he said, the great majority of the public will be "exploited and victimized for the benefit of the few."

Club Meetings

Gustav Metzger, president, New York Central, will have as his topic "Your Stake in America's Railroads," when he addresses the Western Railway Club, at 8:00 p. m., February 5, in Hotel Sherman, Chicago.

The Eastern Car Foreman's Association will meet February 9, at 8 p. m., in the Engineering Societies building, 29 West 39th street, New York, at which time C. L. Heater, vice-president, American Steel Foundries, Chicago, will present a paper entitled "Progress of High Speed Freight Car Trucks."

The installation dinner of the Transportation Club of the Rochester (N. Y.) Chamber of Commerce is scheduled for 6:30 p. m., February 12, at the Sheraton Hotel, in that city.

The proposed changes in the A. A. R. rules of interchange will be discussed when the Northwest Car Men's Association meets at 8:00 p. m., February 5, at 1931 University avenue, St. Paul, Minn. There will be motion pictures also of railroad battalions operating in the South Pacific and in Africa.

Passenger Traffic Officers Elect Jenkins

Frank L. Jenkins, general passenger traffic manager of the Southern, has been elected president of the American Association of Passenger Traffic Officers. He succeeds Henry F. McCarthy, formerly director of the Division of Traffic Movement, Office of Defense Transportation, and now executive assistant to the president of the New York, New Haven & Hartford.

Mr. Jenkins was vice-president of the A. A. P. T. O., and chairman of the Association's Southeastern Standing Territorial Committee. He is chairman also of the administrative committee of the Southern Passenger Association and a past vice-president of the Philadelphia Passenger Association.

Supply Trade

U. S. Steel to Expand Gary Mills

The United States Steel Corporation plans to spend at least \$50,000,000 in post-war improvements to its Gary, Ind., mills, Irving S. Olds, chairman, disclosed in an address before the Gary Chamber of Commerce on January 18. This program, he said, embraces improvements and additions to raw material handling equipment, renovation of blast furnaces and machinery, improvements to facilities for the manufacture of wheels and axles, an enlargement of the sheet and tin mill and a rebuilding and modernization of the bridge and structural steel fabricating plant.

In discussing post-war competition, Mr. Olds said, "The steel industry cannot afford to overlook the possible threat of invasion of its markets by competitive materials, such as aluminum, magnesium, plywood, plastics and glass. All of these substitute products have excellent characteristics and unquestionably will find large post-war usage. To some extent they may even replace steel. In meeting such a threat, those directing the destinies of the steel industry will need to pay constant and scientific attention to the nature of the customers' requirements. If steel can be made to satisfy these requirements, steel should be able to retain its position as the basic raw material. Generally speaking, steel costs less to produce than these competitive substances; steel has a greater tensile strength and other superior physical qualities; steel is less affected by high temperatures. While aluminum and magnesium plants have been greatly extended during the war, their full productive tonnage would be equivalent of only a small percentage of the capacity of the steel industry.

"I am confident that the steel industry will be able satisfactorily to cope with this situation and will have the ingenuity to enhance the use of steel by combining it with one or more of these materials in fields where steel alone is not applicable."

Alexander M. Hamilton, vice-president in charge of foreign sales of the American Locomotive Company, has been appointed president of a newly-formed **American Locomotive Export Company**. The purpose of the new export corporation is to facilitate the handling of foreign business in some countries where it is legally necessary to have such a subsidiary. In announcing formation of the new wholly-owned subsidiary, W. C. Dickerman, chairman of the parent company, said that substantial foreign business was anticipated when the war ended and world reconstruction began. He pointed out that all of the major locomotive-building nations of the world have been using their manufacturing facilities for war production with the result that the world output of locomotives has been subnormal for several years. In addition, there has been great destruction of railway equipment of all kinds by warring armies and by tremendous war-time burdens. "We estimate that outside of the United States and Canada there were approximately 157,000 locomotives in the world at the outset

of this war. A substantial number of these locomotives will have to be replaced. For the first few years after the war in Europe ends, facilities for building locomotives abroad will be inadequate so that a good part of the replacement business will come to the United States."

Mr. Hamilton was graduated from Cornell University with a degree in mechanical engineering in 1909 and joined the American Locomotive Company in that same year. After working in the Schenectady, N. Y., plant, he was transferred to the foreign sales division in New York and in 1915 was sent to Russia to supervise the erection of locomotives sold to that country. During the first world war he served in the United States Field Artillery. He returned to the company and was appointed European representative with headquarters in Paris until 1921 and subsequently served as foreign sales representative for the company in various parts of the world. He was



Alexander M. Hamilton

appointed executive vice-president of the Montreal Locomotive Works, Canadian subsidiary of the American Locomotive Company, in 1942 and vice-president in charge of foreign sales of the American Locomotive Company on April 1, 1944.

F. W. Kateley, formerly motor coach engineer and **E. J. Mathauer**, formerly new development engineer for the J. G. Brill Company, have been promoted to the positions of chief engineer and assistant chief engineer, respectively, of the a.c.f.-Brill Motors Company.

Lester E. Lighton, manager of the department of development and design of the **Electric Storage Battery Company**, Philadelphia, Pa., has been elected vice-president in charge of engineering of the company. Mr. Lighton was graduated from Bucknell University in 1920. He began his career on the sales staff of the Electric Storage Battery Company's Detroit, Mich., branch in that same year and was promoted to manager of automotive manufacturers sales, with headquarters in Philadelphia, in 1925. He was assigned to the department of development and design as assistant to the manager in 1935 and appointed manager of that department in 1940.

H. G. Barnes, vice-president and general manager of the Gould Commercial

division of the **National Battery Company**, St. Paul, Minn., has been elected vice-president in charge of sales of National and its Gould Commercial division to succeed **Herbert King** who has resigned to



H. G. Barnes

enter business in San Francisco, Cal. **Paul J. Carlsen**, works manager of the Gould Commercial division at Depew, N. Y., has been elected vice-president in charge of manufacturing of the American Container Corporation, a National subsidiary, with headquarters in St. Paul.

Mr. Barnes has been associated with the National Battery Company since 1940, when he was appointed vice-president and general manager of the Gould Commercial division with headquarters at Depew. Previously, Mr. Barnes was president of the Motor Power Equipment Company, St. Paul.

Mr. Carlsen was associated with the American Container Corporation from 1927 to 1932 and in 1933 was placed in charge of the rubber container plant at Rock Island, Ill. During the last five years



Paul J. Carlsen

he has been works manager of National's Gould Commercial division at Depew.

Sparrow E. Purdy, president of the **Hyman-Michaels Company**, Chicago, has resigned, effective February 1. Resigning simultaneously with Mr. Purdy are his son, **John P. Purdy**, and his son-in-law, **John I. Duffy**, vice-presidents. Sparrow

E. Purdy has formed the **Purdy Company**, 122 South Michigan Avenue, Chicago, to engage in the railway equipment business and allied enterprises, as well as a general scrap business. He will be joined by J. P. Purdy, John I. Duffy, and M. H. Barnes who is retiring as general auditor and assistant secretary of the Hyman-



Sparrow E. Purdy

Michaels Company. Sparrow Purdy has been with Hyman-Michaels for 37 yrs. He was vice-president and general manager for many years, assuming the presidency in 1942. At that time he succeeded Joseph Michaels, one of the founders of the firm, who assumed the chairmanship of the board on his seventieth birthday.

The **Edward G. Budd Manufacturing Company** has been awarded a large order for artillery shell fuses by the Philadelphia, Pa., ordnance district, U. S. Army.

The Worcester, Mass., plant of **American Steel & Wire Co.**, U. S. Steel subsidiary, has been awarded a third renewal

of its Navy "E" award in recognition of continued outstanding production achievement.

C. F. Patterson and **John A. Owen** have been appointed to the field engineering staff of the **Eutectic Welding Alloys Company**. Mr. Patterson, formerly with the Murray Corporation, will service the company's customers in Michigan, and Mr. Owen, who owned and operated a welding and machine shop for 28 years prior to joining Eutectic, will serve as field engineer for North Carolina.

The **Norck Brush Manufacturing Company's** plant, which was badly damaged by fire late in November, has been entirely rebuilt and has resumed the manufacture of Norck brushes.

H. L. Lansing, research engineer of the **Rail Joint Company**, has been appointed chief engineer, with headquarters as before at New York.

The **Automatic Transportation Company** has been awarded the Army-Navy "E" for the fourth time for continued outstanding achievement in the production of electric propelled materials handling equipment.

The **General Cable Corporation's** Rome, N. Y., plant has been awarded the Army-Navy "E" for excellence in production for the fourth time.

The **Chain Belt Company** of Milwaukee, Wis., has been awarded its fourth Army-Navy "E" for continued excellence in war production.

The **Briggs Clarifier Company**, Washington, D. C., has received its third successive Army-Navy "E" award.

The Emeryville, Calif., plant of **Hubbard & Co.** has been awarded a fourth renewal of its Army-Navy "E."

Robert F. Carr Dies

Robert F. Carr, chairman of the board of the Dearborn Chemical Company, Chicago, died in Passavant Hospital, Chicago, on January 22 after an illness of three weeks. He succumbed to a stomach ailment which had been aggravated by a cold. At the time of his death he was a director of several other companies in Chicago including Wilson & Co., the Continental Illinois Bank & Trust Co., the Peoples Gas Light & Coke Co., and the Chicago & Eastern Illinois.

In addition to his business activities, Mr. Carr had been extensively interested in civic affairs. He was a trustee of the University of Illinois from 1915 to 1921 and served as president of the board in 1920-1921, while later he was chairman of the University of Illinois Stadium committee which raised \$1,850,000 from alumni, faculty, and students for the erection of a stadium which was dedicated to 180 Illinois University men who lost their lives in World War I. From 1931 to 1933 he was a member of the board of education of Chicago, and a trustee of the Century of Progress Exposition, Passavant Hospital

and the Chicago Opera Company. From 1921 to 1923, he was president of the Home for Destitute Crippled Children, Chicago.

Mr. Carr was born at Argenta, Ill., on November 21, 1871, and was graduated



Robert F. Carr

from the University of Illinois in 1893. In the following year he entered the employ of the Dearborn Chemical Company and served successively as secretary and vice-president and general manager until 1907 when he was elected president. In January, 1944, he was elected chairman of the board. During World War I, he served as major on the general staff of the Purchase, Storage and Traffic division of the U. S. Army.

Mr. Carr was a member of several clubs including University, Chicago, Commercial, Old Elm, Onwentsia, Shore Acres, Iroquois, Casino, Saddle & Cycle, Seigniory (Quebec) and Everglades (Palm Beach, Fla.).

OBITUARY

Lucius B. Sherman, who retired in 1941 as a vice-president of the Simmons-Boardman Publishing Corporation, after more than 50 years of service with *Railway Age* and its predecessor publications, died on January 24, at his home in Winnetka, Ill. A sketch of Mr. Sherman's career will be published next week.

George J. Weber, engineer of tests of the Association of Manufacturers of Chilled Car Wheels, died in Chicago on January 20 of a heart attack. Mr. Weber joined the staff of the Association in 1934 as secretary, in 1936 was also named executive assistant to the president and in 1942 was appointed engineer of tests.

Frank L. Gibbons, manager of sales of the alloy division of the Carnegie-Illinois Steel Corporation, Chicago, died in Winnetka, Ill., on January 19. Mr. Gibbons had been associated with Carnegie-Illinois since February 1, 1936. Previously he had been vice-president of the Timken Company, Canton, Ohio, and before that with the Republic Steel Corporation, Cleveland. He was 53 years of age, a native of Pittsburgh, and was educated at Carnegie Institute of Technology.

Charles Edward Brown, executive vice-president of the Okonite Company, died at Chicago on January 13, 1945. Born in Philadelphia, Pa., July 15, 1866, Mr. Brown started his career in Chicago with Marshall Field & Co. in 1884. Five years later he became associated with the McKinlock brothers as vice-president and part owner of the Central Electric Company, an electrical wholesale organization. His experience there as a distributor of Okonite wires, cables and tapes led to his joining the Okonite Company in 1925, as executive vice-president in charge of all sales throughout the Middle West. He had been an Okonite director since 1919 and continued in this capacity until his death. During the same period he was also vice-president and director of the Okonite-Callender Cable Company, Inc.

It was in 1943 that the National Electrical Manufacturers Association presented Mr. Brown with a citation and Fifty-Year Certificate, because of his long and untiring

service as a pioneer in the electrical industry. Acting in many civic affairs, Mr. Brown had served on the board of governors of the Chicago Opera Company and the directorate of the Chicago Boys' Club, Inc., of which he was president, 1938-1940. At the time of his death he had been trustee of the Chicago Music Foundation for seven years and a director of the



Charles Edward Brown

Wacker Corporation for twelve years. He helped to establish the Electric Club of Chicago and served as its president for many years.

Construction

BALTIMORE & OHIO.—This railroad has awarded a contract for the construction of office and service buildings and sanding facilities at Decatur, Ill., at estimated cost of \$21,000 to the Wolter Construction Company of Cincinnati, Ohio.

NEW YORK, CHICAGO & ST. LOUIS.—On January 19, John W. Davin, president of the Nickel Plate announced a project for improving the railroad's plant and facilities at Bellevue, Ohio, at an estimated cost of \$1,600,000. The plans call for the construction of a modern roundhouse, turntable, machine shop, boiler house and various incidental improvements, and the relocation of the west-bound yard, including modern facilities for the yard, engine and other employees. The new roundhouse will have 18 stalls and both the roundhouse and turntable will be designed to accommodate the largest engines now in service on the railroad. The machine shop will be 140 ft. by 120 ft. and will contain modern machinery and equipment throughout. To make way for the new development, the west-bound yard will be extended east of Goodrich road and that portion now behind and west of the roundhouse and coal dock will be removed. Upon the receipt of War Production Board authorization releasing the needed materials, contracts will be awarded and the work started as weather conditions permit.

NEW YORK CENTRAL.—This railroad has awarded contracts for an electrical power line and the installation of a storage tank with foundations for servicing Diesel loco-

motives at its Dewitt yard, Minoa, N. Y., to Edward Joy of Syracuse, N. Y., and for servicing facilities for Diesel locomotive inspection at Harmon, N. Y., to the Duffy Construction Corporation of New York.

Equipment and Supplies

Equipment Installed in 1944

Class I railroads put 40,392 freight cars and 938 locomotives in service in 1944, according to the Association of American Railroads. This was an increase of 11,684 cars and an increase of 165 locomotives compared with the number installed in 1943. In 1942 the railroads put 63,009 new freight cars and 712 new locomotives in service.

Of the new freight cars installed in 1944, there were 14,476 plain box, 3,132 automobile, 4,065 gondolas, 16,656 hopper, 1,319 flat, 482 refrigerator, 261 stock cars and one other type of car. The new locomotives installed in 1944 included 329 steam, one electric, and 608 Diesel-electric, compared with 429 steam and 15 electric and 329 Diesel-electric in 1943.

Class I railroads on January 1, 1945, had 36,597 new freight cars on order. On the same date last year they had 35,737 on order. The former figures included 19,210 plain box, 1,376 automobile box, 4,074 gondolas, 8,915 hoppers, 2,183 refrigerator, 239 stock, and 600 flat cars.

Railroads also had 468 locomotives on order on January 1, this year, which included 66 steam, two electric, and 400 Diesel-electric locomotives. On January 1, 1944, they had 955 locomotives on order which included 339 steam and three electric and 613 Diesel-electric.

FREIGHT CARS

The **DENVER & RIO GRANDE WESTERN** has ordered 500 50-ton box cars from the Pressed Steel Car Company. The inquiry for this equipment was reported in the *Railway Age* of January 13.

The **CHICAGO GREAT WESTERN** has ordered 150 box cars from the Pullman-Standard Car Manufacturing Company.

IRON AND STEEL

The **READING** has ordered 400 tons of 100-lb. rail from the Bethlehem Steel Company.

SIGNALING

The **CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC** has placed an order with the Union Switch & Signal Co. for the material to install centralized traffic control on 47 mi. of single track between Mendota, Minn., and Fairbault. A style C control machine, equipped with train graph and located at Farmington near the middle of the section will control all of the power-operated functions in the territory. The order includes office and field code units, style H-2 searchlight high and dwarf signals, style SL6

electric switch locks, style M-2 switch movements, relays, rectifiers, transformers, housings and switch circuit controllers. Coded track circuits will be used in the territory with the C.T.C. code system superimposed upon an existing communication line. The installation work will be done by the railroad company's forces.

The **CHICAGO, BURLINGTON & QUINCY** has placed an order with the Union Switch & Signal Co. for two model 31, 12-cylinder double rail electro-pneumatic car retarders for installation in the Galesburg, Ill., classification hump yard.

The **CHESAPEAKE & OHIO** has placed an order with the Union Switch & Signal Co. for signal material for the installation of a centralized traffic control on 44 mi. of single track in the territory between Strathmore, Va., and Greenway. A style C control machine located in "DO" Office, Richmond, Va.,—70 mi. from the nearest C. T. C. function at Strathmore, will control the entire territory. In addition to the machine and necessary code equipment, the order includes color-light high and dwarf signals, style M-22A low-voltage electric switch movements, and SL-21 electric switch locks, and relays, with housings. The field work will be done by the railway company's forces.

The **NEWBURGH & SOUTH SHORE** has placed a contract with the Union Switch & Signal Construction Co. for the installation of an all-relay electric interlocking at Belt Junction to replace existing interlocking and signal facilities at Double Track Junction, Belt Junction and Campbell Road, Cleveland, Ohio, and crossings with the Cuyahoga Valley, the Wheeling & Lake Erie, and the River Terminal. A style C control machine located at Belt Junction will handle all the switches and signals at the several locations, with telephone and communication apparatus for the interlocking also incorporated in the control machine. Style H-2 searchlight dwarf signals and style M-2 electric switch layouts will be used.

Abandonments

Urges General Investigation of Employee Protection

The Pere Marquette has suggested that the Interstate Commerce Commission consider whether it should institute on its own motion a general investigation of the matter of specifying conditions for the protection of employees who may be adversely affected by the abandonment, under commission authority, of railroad lines no longer required in the public interest. The proposal was incorporated in the carrier's reply to a petition by the Railway Labor Executives Association (reported in *Railway Age* of January 6, page 135) for authority to intervene in the commission's Finance Docket No. 13937 proceedings, in which the road was authorized to abandon certain trackage.

The union organization's purpose in intervening was to ask the commission to

GREAT RAILROAD MEN HAVE ALWAYS BEEN "BULLS" ON AMERICA!



Because of their farsightedness and their confidence in America, great railroad men have continually planned for the future while meeting the transportation needs of the day.

Even amid present wartime problems, future transportation requirements must be considered,

for locomotives take time to build.

So the railroads, that are steadily adding to their fleets of Lima Super-Power Steam Locomotives, are not only now handling heavier trains at higher speeds, but will be prepared to operate with still greater efficiency tomorrow.

LIMA LOCOMOTIVE WORKS



INCORPORATED, LIMA, OHIO

better combustion



Position of Security Circulators in firebox of turbine locomotive

A new type of steam locomotive, powered by a turbine in place of the cylinders, pistons and driving rods of the conventional design of locomotive, has just been completed and is now undergoing tests on the Pennsylvania Railroad.

The turbine is designed to develop 6900-shaft horsepower, providing power at the tender coupled sufficient to pull a full-length passenger train at 100 miles an hour or to operate heavy freight trains at high speeds.

American Arch

SECURITY CIRCULATOR DIVISION

for the New

STEAM TURBINE LOCOMOTIVE

BY THE APPLICATION OF

SECURITY CIRCULATORS

• This new type of steam locomotive, undergoing tests for the Pennsylvania Railroad, is creating interest in all railroad engineering departments. It is modern, advanced and a product of years' experience in locomotive development by the railroad and the builders.

The Security Circulators used to support the arch and as a circulating device in the firebox of this locomotive were the culmination of proven ability in other classes of power.

The following advantages are secured through the application of Security Circulators.

Security Circulator equipped locomotives are available for continuous operation for longer periods than other locomotives because they have cleaner flues, longer arch life, and improved combustion so that boiler maintenance is greatly reduced.

With Security Circulators circulation is improved over crown sheets and in side water-legs; and honeycombing, flue plugging and cinder cutting are reduced.

The installation of Security Circulators permits the use of a 100% arch in any type of fire box and increases the life of the arch brick.

Company, Inc.

NEW YORK • CHICAGO

reopen a number of abandonment cases in which its customary 2-year reservation of jurisdiction with respect to employee protection is about to expire. It went on to ask the commission to apply to these cases the specific provisions for the employees' benefit which Division 4 applied in the 14426 proceedings, involving certain Burlington trackage, which the full commission has since, in effect, upheld through its refusal (noted in *Railway Age* of January 20, page 211) to reconsider the division's action. In lieu of such conclusive action, the unions suggested that the commission at least should extend the period in which it has reserved jurisdiction for two years more.

It Costs More to Die—Until specific provisions were set forth in the Burlington case, the general effect of which was to guarantee the employee whose job was disturbed by a line abandonment at least an equivalent income for four years thereafter, plus other protective features, it had been the commission's general practice, since the Supreme Court's decision in the *Pacific Electric* case, that it may make abandonment authorizations subject to such protective conditions, to reserve for 2 years the right to order the road involved to meet what it considered suitable requirements for employee protection. The provisions set forth in the Burlington case, however, it was there argued, anticipated a showing that any employee actually had been affected adversely by the abandonment, and constituted a "fundamental and far reaching" change in procedure.

Rather than to consider all the fundamental questions raised by the R. L. E. A. petition as they might appear to be tied to the relatively minor abandonment by the Pere Marquette, the road pointed out, the commission might well decline to take final action now, but might instead undertake a general investigation to determine, first, whether or not general conditions can or should be prescribed in abandonment cases, second, if so, what should be their substance, or, third, if not, what procedure should be adopted.

In reply to a similar R. L. E. A. petition in F. D. 14003, in which the Michigan Central and New York Central, lessee, were authorized to abandon certain trackage, these roads have asked the commission to deny the request on the ground that there is no evidence to support the allegation that any employee represented by the petitioner is or was employed on the line abandoned or that any employee so represented was adversely affected by the abandonment.

In two other proceedings—Nos. 14001 and 14082, both involving abandonments by the Chicago, Milwaukee, St. Paul & Pacific—Division 4 has reopened the cases for further hearing, at a time to be designated, on the question whether terms and conditions should be imposed for the protection of employees who may have been adversely affected. In the former of these, the petition was filed by the Brotherhood of Locomotive Engineers and Brotherhood of Railroad Trainmen, parties to the proceeding, while the R. L. E. A. filed the petition in the latter case, being permitted by the division to intervene.

LEHIGH VALLEY.—The application of this company and the Loyalsock Railroad for authority to abandon operation of and to abandon, respectively, a line from Noxen, Pa., to Splash Dam, 9.74 miles, has been denied by Division 4 of the Interstate Commerce Commission on the ground that the prospects for a normal volume of traffic in the future are good, while "prior to 1943 no clear loss resulted from operation of the line." An examiner's proposed report recommending denial of the application was noted in *Railway Age* of September 23, 1944, page 497.

TEXAS & NEW ORLEANS.—Division 4 of the Interstate Commerce Commission has authorized this company to abandon a portion of a branch from Leonville, La., to Port Barre, 6.14 miles, on the ground that neither the present nor the prospective volume of traffic on the segment is sufficient to warrant its retention. The authorization was issued subject to the conditions with respect to the protection of any employees adversely affected that were set forth in detail in the report and order in the Burlington proceeding, Finance Docket No. 14426, which the division has since taken as a precedent in a number of abandonment cases where there was a showing in the record that employees might perhaps, under certain circumstances, suffer some loss of income, or be transferred to other employment, as a result of the authorization.

Financial

BALTIMORE & OHIO.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue \$720,000 of series H promissory notes, sold to the National City Bank of Cleveland, Ohio, at par with a 1.61 per cent interest rate. The proceeds are to be applied to the purchase of 200 50-ton automobile box cars from the Greenville Steel Car Company at a total cost of \$818,734.

CHICAGO & NORTH WESTERN.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue \$3,261,443 of promissory notes in further evidence of the unpaid purchase price of various Diesel-electric locomotives being acquired under conditional sale agreements (previous item in *Railway Age* of January 6, page 133). The notes, payable over a 96-month period, have been sold on a 1½ per cent interest basis to the First National Bank of Chicago and others. The division pointed out that this carrier, since it noted its activities in reducing indebtedness in a report of September 19, 1944, had made further progress in this respect by arranging to retire with treasury funds an additional \$5,000,000 of 15-year collateral trust 4 per cent notes.

DENVER UNION TERMINAL.—*Retirement of Bonds.*—The Interstate Commerce Commission has been asked to find that it is without jurisdiction, under section 5(2) of the Interstate Commerce Act, in connection with an agreement for the retirement of \$4,000,000 of this company's 4½ per cent

gold bonds due in 1964, all of which are held by the Union Pacific. The stock of the terminal is owned in equal portions by the Santa Fe, Burlington, Colorado & Southern, Rock Island, Denver & Rio Grande Western, and Union Pacific, and these six proprietary companies propose to advance funds necessary to retire the terminal's bonds, each providing one-sixth of the amount. That portion which is applied to the principal of the bonds, and which is to be capitalized as investment, will be classed as an advance by the respective proprietary companies, while the portion covering premium and incidental expenses will be handled as a rental payment. The carriers assert that this procedure does not constitute a major change in the arrangement under which the terminal company was set up and has operated, and that the commission's approval therefore is not required.

ILLINOIS CENTRAL.—*R. F. C. Sale of Securities.*—The Reconstruction Finance Corporation has announced the sale to Kidder, Peabody & Co. and others of \$5,200,000 Illinois Central 3 per cent equipment trust certificates, series S, at 104.604 and accrued interest. This price represents a premium to R. F. C. of \$239,416.

LEHIGH & NEW ENGLAND.—*Promissory Notes.*—This road has applied to the Interstate Commerce Commission for authority to issue \$1,156,000 of promissory notes on account of indebtedness previously incurred in the acquisition of equipment under conditional sale agreements.

MISSOURI PACIFIC.—*Reorganization.*—Hearing of objections to the plan of reorganization for the Missouri Pacific before the District Court at St. Louis, Mo., has been adjourned to March 19, following nearly two weeks of testimony, most of which was in connection with the alleged invalidity of a claim by the railroad against its subsidiary, the New Orleans, Texas & Mexico. The Court directed that further testimony in connection with the claim be separated and delayed until all other objections to the plan have been heard and argued.

NEW YORK CENTRAL.—*Promissory Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue \$1,142,080 of series A promissory notes in connection with the purchase from the American Locomotive Company of 19 Diesel-electric switching locomotives, including 7 of the 1,000-hp. type, each costing \$78,904, and 12 of the 660-hp. type, each costing \$60,154.

In another application, this road has asked similar authority to issue \$212,160 of series B promissory notes in connection with the proposed acquisition from the Baldwin Locomotive Works of three 1,000-hp. Diesel-electric switching locomotives, each costing \$78,723.

PENNSYLVANIA.—*Refinancing.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue \$60,000,000 of series F 40-year general mortgage bonds, the interest rate of 3½ per cent having been determined by competitive bidding for \$51,782,000 of the issue, sold

Increased Capacity

FOR



4-8-4's



Franklin Type "E" Locomotive Boosters* used in both Freight and Passenger Service

Heavy freight and passenger traffic moves fast on the FRISCO, because its 4500 Class 4-8-4 locomotives, used in both kinds of service, have Franklin Type E Boosters.

The Booster saves starting time by providing quicker pick-up. It enables the locomotive to accelerate rapidly to road

speed and maintain speed on grades.

By making it possible to haul heavier trains at sustained speeds, it helps to increase the traffic capacity of any line.

These advantages can be secured by any railroad through the application of Franklin Type E Boosters to its locomotives.

*Trade Mark Reg. U.S. Pat Off.



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at 100.609 to Kuhn, Loeb & Company and others, the average annual cost to the road being 3.1 per cent. Four wholly-owned companies in the Pennsylvania system have bought \$7,108,000 of the new issue at the same terms, while \$1,110,000 will be held in the company's treasury, replacing other bonds. By such exchange, and by the sale arranged through competitive bidding, an equal principal amount of 40-year 4½ per cent gold debenture bonds will be retired, these being callable at 102½. The transaction is estimated to result in a net saving to maturity of about \$24,685,364, while income tax deductions will result in benefits to the extent of about \$3,462,000.

SEABOARD AIR LINE.—R. F. C. Sale of Securities.—The Reconstruction Finance Corporation has announced the sale, at a premium of \$38,925, of \$1,836,000 of this road's series KK 2½ per cent equipment trust certificates to Lazard Freres & Co. of New York. The price received was 102.12.

TENNESSEE CENTRAL.—Pledge of Bonds.—Division 4 of the Interstate Commerce Commission has authorized this road to pledge \$200,000 of series A 4 per cent first mortgage bonds as collateral security for short term notes.

WABASH.—Refinancing.—On January 22, the Wabash requested bids by February 5 on a \$47,000,000 issue of first mortgage bonds, series B, the proceeds to be applied to the redemption on April 1, of the \$47,354,300 of first mortgage 4 per cent bonds, series A, which were issued in 1942 in connection with the reorganization of Wabash Railway Company, predecessor of the present company.

The request calls for bids on a somewhat different basis than was prescribed when the company called for bids last October, at which time the one bid received was rejected. Under the new plan, the bidders are to name the interest rate for the new bonds in multiples of ¼ of 1 per cent per year, but not to exceed 3½ per cent per year, and if the latter rate is named the bid price must be not less than the principal amount of the bonds plus accrued interest. If the interest rate named is less than 3½ per cent, the bid price must be not less than 98 per cent of the principal plus accrued interest. The new bonds are to be dated February 1, 1945, and mature February 1, 1971. A circular distributed with the invitation for bids points to a reduction in the company's debt since January 1, 1942, of \$21,880,450. Operating revenues of the Wabash in 1944 amounted to \$94,701,127. The circular states that the present bonds were issued in exchange for previously issued first mortgage bonds which have been "protected" through two receiverships. "The presently outstanding first mortgage bonds," the circular states, "are in reality a continuation of bonds in existence for many years."

Average Prices Stocks and Bonds

	Jan. 23	Last week	Last year
Average price of 20 representative railway stocks...	47.06	48.92	37.51
Average price of 20 representative railway bonds...	93.67	94.65	83.65

Dividends Declared

Chattahoochee & Gulf.—\$1.50, payable January 15 to holders of record January 9.
 Dallas Ry. & Terminal.—7% preferred, \$1.75, quarterly, payable February 1 to holders of record January 22.
 Erie.—preferred A, \$1.25, quarterly, payable March 1, June 1, September 1 and December 1 to holders of record February 14, May 17, August 17, and November 16 respectively.
 Erie & Kalamazoo.—\$1.50, semi-annually, payable February 1 to holders of record January 26.
 Louisville & Nashville.—\$1.75, quarterly, payable March 10 to holders of record February 9.
 North Carolina.—7% preferred, \$3.50, semi-annually, payable February 1 and August 1 to holders of record January 21 and July 21 respectively.
 Peoria & Bureau Valley.—\$2.50, payable February 10 to holders of record January 19.
 Pullman, Inc.—50¢, payable March 15 to holders of record February 23.
 United New Jersey RR & Canal.—\$2.50, quarterly, payable April 10 to holders of record March 20.
 Wheeling & Lake Erie.—5½% conv. preferred, \$1.37½, quarterly; 4% prior lien, \$1.00, quarterly, both payable February 1 to holders of record January 25.

Railway Officers

EXECUTIVE

Gerard B. Townsend, whose appointment as assistant to the president of the Erie at Cleveland, Ohio, was announced in the *Railway Age* of January 6, was born at New York on April 3, 1902. Mr. Townsend attended Phillips Exeter Academy and was graduated from Princeton



Gerard B. Townsend

University in 1923. After serving as freight traffic solicitor of the Munson Steamship Lines, he worked for several years as a railroad statistician with various banks and investment banking houses, and in 1935 was given charge of the railroad division of the corporate underwriting department of Lazard Freres & Co. In 1943 Mr. Townsend joined the Union Trust Company of Pittsburgh (Pa.), where he headed the railroad analysis department in addition to his duties as supervisor of loans until January 1, 1945, when he assumed his new position of assistant to the president of the Erie.

Pearce Horne, whose resignation as assistant vice-president, real estate and conveyancing department, of the Southern at

Washington, D. C., was announced in the December 30 issue of *Railway Age*, was born in Whitfield County, Ga., on November 10, 1873, and graduated from the Law School of Columbian (now George Washington) University at Washington. He entered railroad service with a predecessor line of the Southern as a stenographer in the passenger department at Knoxville, Tenn., in 1891, and later became a court reporter in the law department. In 1896



Pearce Horne

he was named secretary to the assistant general counsel at Washington, and subsequently held positions as law clerk, chief conveyancer, superintendent of the real estate and conveyancing department, and solicitor. He was appointed assistant vice-president in September, 1938, remaining in that post until his recent retirement.

Floyd R. Mays, whose retirement as vice-president of the Illinois Central, with headquarters at Chicago, was reported in the *Railway Age* of January 13, was born at Crockett, Va., on August 28, 1879, and entered railway service at the age of 15 years as a machinist apprentice on the Norfolk & Western. Later he was advanced to machinist and subsequently served in that capacity on the Southern at Salisbury, N. C., and Selma, Ala. On July



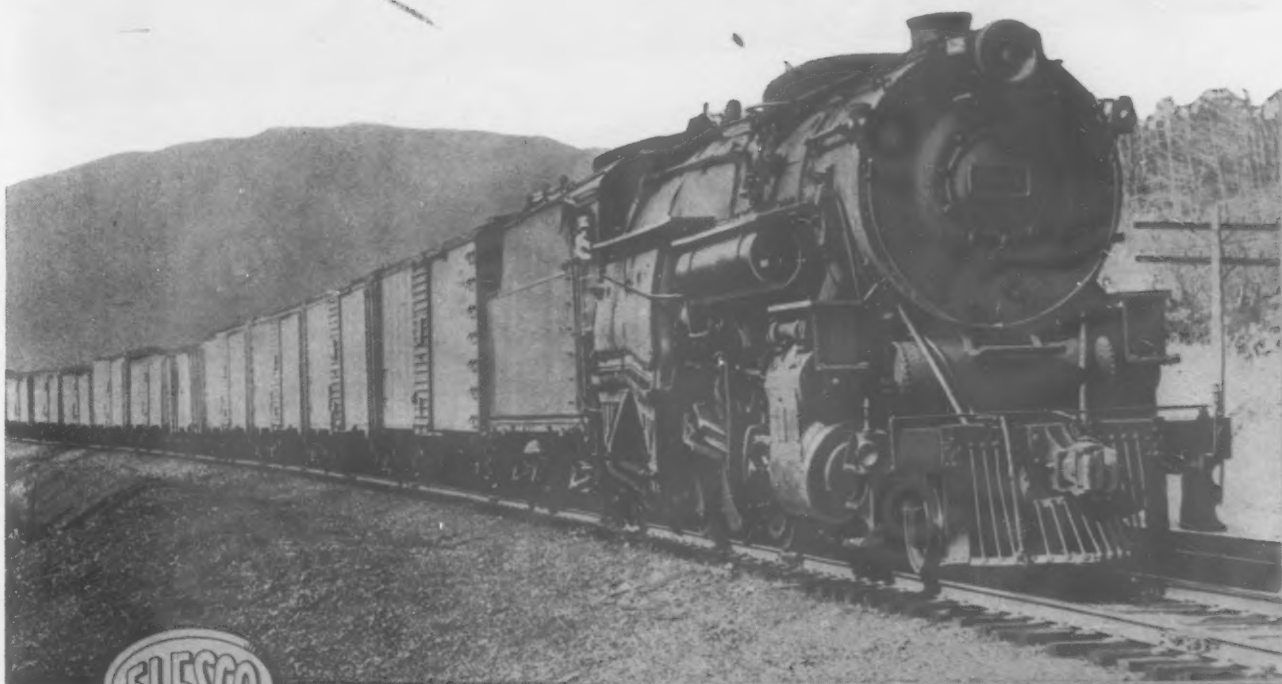
Floyd R. Mays

31, 1901, he became a machinist on the Yazoo & Mississippi Valley (now part of the Illinois Central) at Memphis, Tenn., and from October, 1901, to 1917, Mr. Mays

Something Can Be Done About It...

The boiler capacity

of the older locomotives can be substantially increased by the application of Elesco exhaust steam injectors...the feedwater heater that provides the highest heat reclamation of any feedwater heater per unit of weight and cost.



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LOCOMOTIVES

THAT ARE MAKING

HISTORY



FIVE more of the mightiest of steam locomotives—"Big Boys"—have recently been delivered to the Union Pacific.

These powerful locomotives are hauling freight trains of 3,500 tons over the Ogden-Green River run daily, without a helper. One section, 66 miles long, has a ruling grade of 1.14 per cent.

American Locomotive has delivered 25 of these "Big Boys" to the Union Pacific. The first "Big Boy" was delivered in September 1941, just in time to take care of the heavy freight being shipped by rail through the Ogden-Green River district; 3,836,143,000 gross ton miles in 1941; 5,958,950,000 gross ton miles in 1943.

Here are the "SPECS":

Weight on Drivers	545,000 lbs.
Weight of Engine	772,000 lbs.
Cylinders	23 3/4 x 32 in.
Diameter of Drivers	68 in.
Boiler Pressure	300 lbs.
Tractive Power	135,375 lbs.
Tender Capacity—Water	25,000 gals.
Tender Capacity—Fuel	28 tons

Locomotive designs developed by American Locomotive Company have been, are, and will continue to be powerful factors in American railroad operating efficiency and economy.

FINANCIAL LEGAL AND
ACCOUNTING

H. C. Brown, assistant secretary,
A. M. Watson, assistant secretary,
of the Chicago & North Western
have been appointed following
the resignation of Mr. Brown.

Mr. Brown, who is married, has been
employed in the Chicago & North Western
for 22 years. He was born in New York City
in 1892. He attended the University of
Chicago.

Mr. Watson, who is married, has been
employed in the Chicago & North Western
for 15 years. He was born in New York City
in 1907. He attended the University of
Chicago. He is a member of the American
Association of Accountants and the
Chicago Association of Accountants.

John R. ...



● **Unsurpassed for the job because Built for the Job**



American Locomotive

NEW YORK

served successively as locomotive fireman, locomotive engineman, instructor on transportation rules, traveling engineer, assistant trainmaster and trainmaster. On August 15, 1917, he was promoted to superintendent of the New Orleans division, with headquarters at Vicksburg, Miss., where he remained until April 1, 1923, when he was transferred to the Illinois division of the Illinois Central, with headquarters at Champaign, Ill. On January 1, 1926, Mr. Mays was advanced to general superintendent of the Y. & M. V., with headquarters at Memphis, and on October 1, 1929, he was promoted to general superintendent of motive power of the I. C., with headquarters at Chicago. His title was later changed to general superintendent of equipment. In April, 1939, he was advanced to general manager, and on January 1, 1940, he was elected to the position he held at the time of his retirement.

John R. Smith, whose appointment as assistant to the vice-president, communications, of the Southern at Washington, D. C., was announced in the *Railway Age* of January 6, was born at Hampton, Va., on



John R. Smith

October 8, 1889, and entered railroad service with the Southern in September, 1905, as a telegrapher in the general telegraph office at Washington. In 1909 he was promoted to assistant manager there, becoming night manager one year later, and manager in 1917. He served as superintendent of telegraph, lines east, at Charlotte, N. C., from 1924 to 1934, when he was named superintendent of telegraph and telephone. In 1944, he was advanced to superintendent, communications, at Charlotte, the position he held at the time of his recent appointment as assistant vice-president, communications.

Frank A. Thompson, whose appointment as sole trustee and chief executive of the St. Louis-San Francisco was reported in the *Railway Age* of January 13, has been elected president of the St. Louis-San Francisco of Texas and president of the whole Frisco Transportation Company, a wholly-owned subsidiary of the Frisco.

Ferdinand J. Sieghardt, whose appointment as co-trustee of the New York, Ontario & Western at New York was ratified by the Interstate Commerce Commis-

sion recently, as reported in the financial columns of the *Railway Age* of December 23, was born at New York on March 29, 1898. He attended the New York University School of Commerce, and joined John Miller & Co., Inc., furniture manufacturers, in 1919, becoming vice-president in 1922. Mr. Sieghardt went into the same line of business for himself in 1929, engaging also in architectural woodwork and alteration work; and after selling part of his business in 1938, he specialized in rehabilitation and modernization of homes and apartment houses. In 1941 he was appointed trustee of William Jameson & Co., Inc., distillers and dealers in whiskey and spirits, by the federal court in the Southern district of New York, and successfully terminated the reorganization of the company in 1944 by sale of the assets to Joseph E. Seagram & Sons, Inc.

W. C. Higginbottom, general manager of the eastern region of the Pennsylvania, has been promoted to assistant vice-president, eastern region, with headquarters, as before, at Philadelphia, Pa. Mr. Higginbottom, who was born at North Lawrence, Ohio, on May 14, 1880, entered railroad service on July 4, 1895, as a telegraph operator on the eastern division of the Pennsylvania Lines West of Pittsburgh, and was appointed train dispatcher in January, 1902. He became power director in February, 1908, and eastern division operator the following August. He served as assistant trainmaster of the eastern division from January, 1912, to October, 1918, when he was promoted to trainmaster. In November, 1921, Mr. Higginbottom was advanced to superintendent of the Peoria division, and after subsequent transfers in the same capacity to the Richmond, Panhandle, and Philadelphia divisions he was



W. C. Higginbottom

named general superintendent of transportation, western region, on June 16, 1927. The following May he became general superintendent, northwestern division, and in June, 1929, he was appointed general manager of the western region. On November 1, 1931, he was transferred to the eastern region remaining in that post until his recent promotion to assistant vice-president.

FINANCIAL, LEGAL AND ACCOUNTING

H. C. Strong, assistant secretary, and **A. M. Waldron**, assistant treasurer, both of the Chesapeake & Ohio and the Pere Marquette, have been appointed assistant secretary and assistant treasurer respectively of the New York, Chicago & St. Louis, at Cleveland, Ohio.

W. O. Colwell has been appointed treasurer of the Denver & Salt Lake, with headquarters at Denver, Colo., succeeding **A. F. Dood**, who has retired. **Miss M. B. Ellis** has been appointed assistant treasurer, with headquarters at Denver.

Frank W. Franek, whose retirement as auditor of passenger accounts of the Union Pacific, with headquarters at Omaha, Neb., was reported in the *Railway Age* of January 13, was born at Leavenworth, Kan., on November 13, 1884, and entered railway service on June 1, 1900, as a ticket sorter and clerk of the Union Pacific at Omaha. He subsequently held a number of minor positions with the passenger accounting department, including clerk, rate and division clerk and head clerk, until 1935 when he was promoted to chief clerk at Omaha. In October, 1939, Mr. Franek was advanced to the position he held at the time of his retirement.

William F. Cunningham, assistant general freight claim agent of the New York Central System at New York, has retired after more than 43 years of service. **T. A. Ward**, freight claim agent at Buffalo, N. Y., has been named assistant general freight claim agent there. **C. J. Conklin** has been named freight claim agent and **W. M. Stewart** assistant freight claim agent at New York. **J. R. Stevenson** and **J. T. O'Connor** have been appointed district freight claim agents at Chicago and Rochester, N. Y., respectively.

G. A. Heisey, general attorney of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., has resigned to accept other employment. **E. E. Boyner** and **H. B. Ramsey**, general attorneys, have been appointed assistant general solicitors, with headquarters as before at Minneapolis. **F. B. Crouch** and **A. O. Bjorklund** have been appointed general attorneys at Minneapolis, replacing Mr. Boyner and Mr. Ramsey, respectively.

OPERATING

H. J. Molke has been appointed superintendent of car service of the Chicago, Indianapolis & Louisville, with headquarters at Lafayette, Ind.

P. A. Moffitt and **E. L. Anderson** have been appointed assistants to the general manager of the St. Louis-San Francisco, both with headquarters at Springfield, Mo.

S. F. Lynch, superintendent of transportation of the Illinois Central at Chicago, has been promoted to general superintendent of transportation, with the same headquarters, a newly-created position.

Calvin A. Wall, assistant superintendent of dining cars of the Denver & Rio Grande Western at Denver, Colo., has been

promoted to superintendent of dining cars, with the same headquarters, succeeding **Clyde G. Douglass**, who has resigned to become superintendent of dining cars of the Seaboard Air Line.

L. A. Collins, superintendent of the Oregon division of the Union Pacific, has been promoted to general superintendent of the Northwestern district, with headquarters at Portland, Ore. **A. McAllister**, assistant superintendent of the Oregon division, has been advanced to superintendent, with headquarters at Portland, succeeding Mr. Collins. **E. H. Bailey**, assistant division superintendent at North Platte, Neb., has been transferred to Green Rivers, Wyo., and **T. P. Argubright**, trainmaster at Kansas City, Mo., has been transferred to Rawlins, Wyo.

Charles F. Duggan, superintendent of the Iowa division of the Illinois Central at Waterloo, Iowa, has been promoted to assistant general manager, with headquarters at Chicago, a newly-created position. **E. H. Hallman**, trainmaster at Waterloo, has been advanced to superintendent of the Springfield division, with headquarters at Clinton, Ill., succeeding **C. J. Fitzpatrick**, who has been transferred to the Iowa division, replacing Mr. Duggan. **R. E. Lees**, assistant trainmaster at Champaign, Ill., has been promoted to trainmaster, with headquarters at Vicksburg, Miss., relieving **John L. Beven, Jr.**, who has been transferred to Kankakee, Ill., as trainmaster, where he succeeds **E. J. Brosseau**, who in turn has been transferred to Waterloo as trainmaster, relieving Mr. Hallman.

Leonard C. Ayers, assistant general manager of the Norfolk & Western with headquarters at Roanoke, Va., has retired after 54 years of service. Mr. Ayers was born in Henry County, Va., on April 8, 1875, and entered railroad service in 1890 as a waterboy during the construction of the Roanoke & Southern (now the Winston-Salem line of the Norfolk & Western). After serving on various divisions of the road as gang foreman, roadmaster, superintendent of construction, and assistant superintendent, Mr. Ayers was named superintendent of the Shenandoah division on February 16, 1923. He was promoted to general superintendent, eastern general division, on October 1, 1934, and remained in that post until December 1, 1940, when he became assistant general manager, the position he held at the time of his recent retirement.

Andrew J. Ferentz, superintendent of the Wyoming division of the Lehigh Valley at Wilkes-Barre, Pa., has been transferred to the Buffalo division with headquarters at Buffalo, N. Y., succeeding **George T. McCleary**.

C. J. Henry, superintendent of freight transportation of the Pennsylvania at Philadelphia, Pa., has been named superintendent of the Maryland division at Baltimore, Md., succeeding **J. A. Schwab**, who has been transferred to the Pittsburgh division with headquarters at Pittsburgh, Pa., to replace **F. W. Stoops**, who has been named assistant general manager of the central region. **B. W. Tyler, Jr.**,

division engineer of the Maryland division at Baltimore, has been named superintendent of the Renovo division at Erie, Pa., succeeding **J. D. Morris**, who has transferred to the Panhandle division where he succeeds **J. E. Gillum**, whose appointment as superintendent of the Philadelphia Terminal division was announced in the January 20 issue of *Railway Age*. **A. J. Greenough**, division engineer at Pittsburgh, has been appointed superintendent of the Wilkes-Barre division at Sunbury, Pa., succeeding **P. M. Roeper**, who has been named superintendent of freight transportation as reported in the January 20 *Railway Age*.

TRAFFIC

L. G. Weber has been appointed eastern passenger agent of the Seaboard Air Line at New York.

Harry A. Witte, commerce agent of the southwest region of the Baltimore & Ohio at Cincinnati, Ohio, has been appointed division freight agent at Baltimore, Md., succeeding **Carl H. Groninger**, who has been named assistant general freight agent at Chicago to replace **P. C. McCormick**, assigned to other duties.

A. C. Stenberg, district freight agent of the Duluth, South Shore & Atlantic at Seattle, Wash., has been promoted to general western freight agent, with the same headquarters. The position of district freight agent has been abolished.

H. S. Wilson, general agent of the Lehigh Valley at Chicago, has been promoted to assistant general freight agent, with headquarters at Detroit, Mich., succeeding **B. B. Harris**, who has retired. **G. B. Peterson** has been appointed general agent at Chicago, replacing Mr. Wilson.

Ernst Gommer has been appointed assistant general passenger agent of the Western Pacific, with headquarters at San Francisco, Cal., and **Willard M. Workman** has been appointed district passenger agent, with headquarters at Sacramento, Cal.

George F. Ehlen, assistant general freight agent of the Spokane, Portland & Seattle at Portland, Ore., has been promoted to general freight agent, with the same headquarters. **Harry W. Shields**, assistant general passenger agent, has been advanced to general passenger agent, with headquarters as before at Portland.

C. J. Youngblood, whose promotion to western traffic manager of the Southern, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of December 23, was born at New Orleans, La., on July 25, 1894, and entered railway service in October, 1912, as a clerk of the Southern at Montgomery, Ala. He subsequently held several minor positions with that road at Montgomery, New Orleans, Mobile, Ala., Atlanta, Ga., Birmingham, Ala., and Charlotte, N. C., until March 31, 1924, when he was promoted to freight traffic representative, with headquarters at Montgomery. From April, 1924, to March, 1932, Mr.

Youngblood served as commercial agent at Montgomery, Jacksonville, Fla., Chicago, and St. Louis, and in April of the latter year he was advanced to district freight and passenger agent at St. Louis. On July 1, 1936, he was promoted to division freight



C. J. Youngblood

agent, with headquarters at Columbia, S. C., later being transferred to Louisville, Ky. On February 1, 1940, he was advanced to assistant freight traffic manager at Louisville, holding that position until his new appointment.

J. A. Wilson, whose appointment as assistant to the freight traffic manager of the Seaboard Air Line at Norfolk, Va., was announced in the *Railway Age* of January 6, was born at Portsmouth, Va., on September 3, 1904, and entered railroad service as a messenger in the office of the general freight agent of the Seaboard in 1922. In February, 1941, Mr. Wilson became associated with the Ocean Steam-

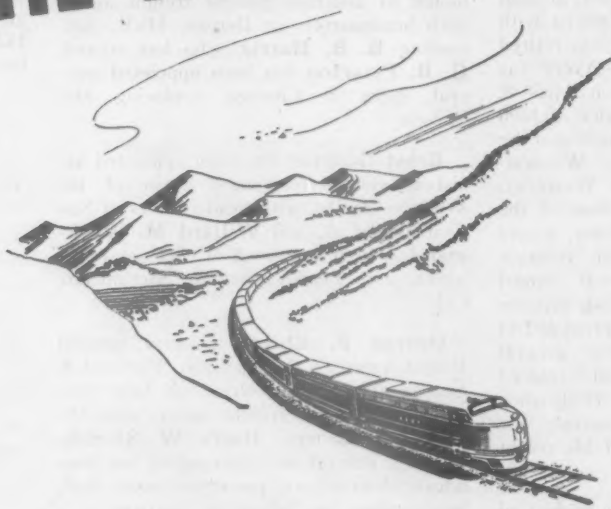


J. A. Wilson

ship Co. of New York as assistant to the freight traffic manager, but with the suspension of coastal steamship operations, he accepted a position with the Board of Investigation and Research at Washington, D. C. In June, 1943, he was named assistant general freight agent of the Piedmont and Northern at Charlotte, N. C.; and he re-entered the service of the Seaboard on November 1, 1944, as special representative in the office of the general freight agent, the position he held at the time of

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It saves much time in flat country

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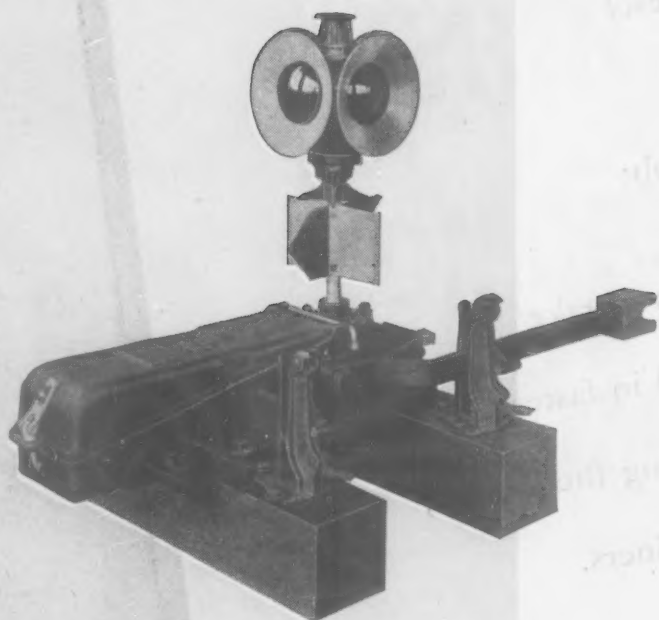
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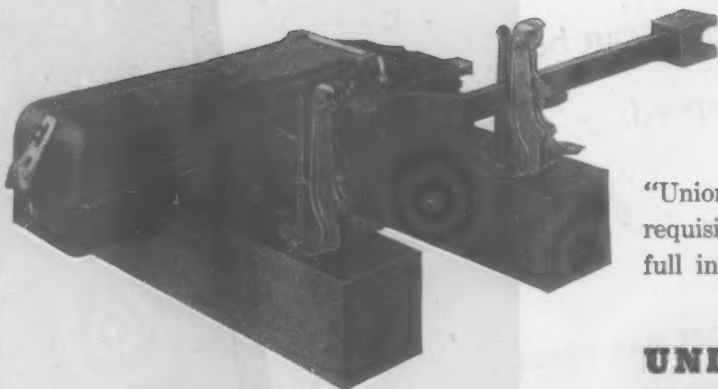
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2. Ease of throwing
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his recent promotion to assistant to the freight traffic manager.

J. A. Kane, assistant to the freight traffic manager of the Seaboard, has been appointed assistant general freight agent at Norfolk, Va., and will henceforth handle rate cases before the Interstate Commerce Commission and state regulatory bodies under the direction of the assistant freight traffic manager. Mr. Kane was born at Norfolk on October 23, 1905, and entered



J. A. Kane

railroad service in November, 1921, as a messenger in the general freight office of the Seaboard. On January 1, 1944, he was named chief clerk to the freight traffic manager, and the following November he became assistant to the freight traffic manager, the position he held at the time of his appointment as assistant general freight agent.

ENGINEERING & SIGNALING

H. C. Griffith, electrical engineer of the Pennsylvania at Philadelphia, Pa., has been appointed assistant chief engineer—traction, communications, signals, of the system with the same headquarters. **Jacob Stair, Jr.**, assistant engineer, office of assistant to the vice-president, operation, has been named to succeed Mr. Griffith as electrical engineer. **H. L. Stanton**, assistant chief engineer—signals, with headquarters also at Philadelphia, has been promoted to superintendent of telegraph and signals, eastern region, there, replacing **John I. Kirsch**, who has been assigned to the position of engineer of tests—signals, on the staff of the chief engineer.

MECHANICAL

F. J. Larrissey, chief A. A. R. inspector of the Erie at Cleveland, Ohio, has been appointed chief shop inspector with the same headquarters, succeeding **P. M. Mitchell**, deceased. **L. F. Rozesky**, assistant supervisor, car repair, at Cleveland, has been named chief A. A. R. inspector there replacing Mr. Larrissey.

Jean L. Brossard, whose promotion to assistant superintendent of motive power of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Milwaukee, Wis., was reported in the *Railway Age* of January 13, was born at Austin, Minn.,

on December 8, 1892, and entered railway service on May 28, 1911, as a pump house man of the Milwaukee at Farmington, Minn. He subsequently served as night roundhouse foreman and general roundhouse foreman at various points of the line, including Montivideo, Minn., Ottumwa, Iowa, St. Paul, Minn., and Minneapolis, until August 16, 1934, when he was promoted to assistant division master mechanic, with headquarters at Chicago. On May 1, 1941, Mr. Brossard was advanced to master mechanic at Aberdeen, S. D., later being transferred to Savanna, Ill., and Chicago, remaining in the latter location until his new appointment, effective January 1.

E. N. Stewart, acting master mechanic of the Smithers division of the Canadian National at Prince George, B. C., has been promoted to master mechanic, with the same headquarters. **W. G. McConachie**, master mechanic at Edmonton, Alta., has retired.

SPECIAL

C. M. Gustafsen, route agent of the Railway Express Agency at Des Moines, Iowa, has been advanced to district manager of public relations, Mid-Central department, with headquarters at Chicago, succeeding **Glen C. Lace**, whose promotion to air express manager, Central department, at Chicago, is reported elsewhere in these columns.

F. A. Gaffney, special representative in the Canadian National's department of research and development, who has been on loan to the Bermuda government for several months studying transportation facilities on the island, has been appointed transport economist at Montreal, Que. His new duties will include the preparation of studies of the effect of highway and air competition on railways. Mr. Gaffney entered railroad service in the Canadian National's transportation department in 1920, and has served subsequently as clerk-stenographer, secretary to the general superintendent of transportation, and special assistant in the bureau of economics.

Dr. William M. Barr, chief chemical and metallurgical engineer of the Union



Dr. William M. Barr

Pacific at Omaha, Neb., has been promoted to research and standards consultant, with the same headquarters. Dr. Barr was born

at West Union, Iowa, on August 26, 1878 and was graduated from the University of Iowa in 1902. Later he attended Grinnell College and the University of Pennsylvania from the latter of which he received the degree of Doctor of Philosophy in 1908. Dr. Barr first entered railway service in May, 1916, as a consulting chemist for the Union Pacific, later becoming chief chemist and metallurgical engineer, the position he held at the time of his recent promotion.

OBITUARY

Caleb Clothier, land and tax agent of the New York Central at Rochester, N. Y., died there on December 23. He was 62 years old.

Durbin Van Law, industrial engineer of the Denver & Rio Grande Western, with headquarters at Denver, Colo., died at his home in that city recently.

Frank M. Gould, vice-president and director of the St. Louis Southwestern at New York, died at his home at Oyster Bay, N. Y., on January 13. He was 45 years old. Mr. Gould, who was born at



Frank M. Gould

New York and graduated from Yale University in 1920, was elected assistant secretary of the St. Louis Southwestern on June 30, 1920. On April 24, 1924, he was elected a vice-president of the company, becoming a director in May, 1927, and he remained in these positions until his death.

Roy A. McCandless, who retired in 1942 as superintendent of the Klamath division of the Great Northern, with headquarters at Klamath Falls, Ore., died at Seattle, Wash., on January 18. Mr. McCandless was born at Wilton Junction, Iowa, on June 5, 1879, and entered railway service on September 1, 1894, as an office boy in the office of the general manager of the Great Northern. He later served as secretary to the general manager, chief clerk to the superintendent on various divisions, trainmaster, assistant superintendent, superintendent of various divisions and general superintendent at Great Falls, Mont. In January, 1937, he was promoted to general manager of the Lines West of Williston (N. D.), with headquarters at Seattle, Wash., and in January, 1942, he was appointed to the position he held at the time of his retirement.

Operating Revenues and Operating Expenses of Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF NOVEMBER, 1944 AND 1943

Item	United States		Eastern District		Southern District		Western District	
	1944	1943	1944	1943	1944	1943	1944	1943
Miles of road operated at close of month	228,525	228,931	56,035	56,177	43,365	43,386	129,125	129,368
Revenues:								
Freight	\$585,431,726	\$566,361,955	\$217,011,677	\$212,421,763	\$110,083,419	\$103,839,881	\$258,336,630	\$250,100,311
Passenger	140,288,034	141,923,346	56,116,755	55,672,746	26,746,245	27,600,450	57,425,034	58,650,150
Mail	11,543,295	10,916,852	3,892,960	3,659,405	1,993,288	2,003,680	5,657,047	5,253,767
Express	12,955,434	11,964,609	3,659,355	4,320,553	1,885,513	1,577,446	7,410,566	6,066,610
All other operating revenues	30,454,001	30,827,044	13,098,602	12,731,625	4,589,980	4,121,427	12,765,419	13,973,992
Railway operating revenues	780,672,490	761,993,806	293,779,349	288,806,092	145,298,445	139,142,884	341,594,696	334,044,830
Expenses:								
Maintenance of way and structures	102,365,415	97,369,559	39,318,205	37,904,143	17,153,220	15,118,393	45,893,990	44,347,023
Depreciation	8,915,896	8,765,797	3,892,970	3,740,918	1,456,649	1,490,136	3,566,277	3,534,743
Retirements	2,798,703	721,805	687,039	306,224	387,704	34,341	1,723,960	381,240
Deferred maintenance	224,632	544,800	163,945	336,434		*12,750	60,687	221,116
Amortization of defense projects	1,799,697	1,194,215	579,738	386,786	318,699	227,798	901,260	579,631
Equalization	*1,060,562	*1,398,215	*180,818	*378,140	*280,325	*893,383	*599,419	*126,692
All other	89,687,049	87,541,157	34,175,331	33,511,921	15,270,493	14,272,251	40,241,225	39,756,985
Maintenance of equipment	131,556,977	127,591,021	54,308,226	54,173,877	25,340,565	22,874,525	51,908,186	50,542,619
Depreciation	18,009,706	17,673,765	7,616,354	7,268,218	3,601,588	3,521,490	6,791,764	6,884,057
Retirements	3,218		*1,192		381		4,029	
Deferred maintenance and major repairs	*51,188	268,853	655	5,333		*9,289	*51,843	272,809
Amortization of defense projects	15,719,400	13,146,296	5,175,621	4,907,059	3,853,357	3,370,751	6,690,422	4,868,486
Equalization	*56,171	*1,056	*9,064	96,265	*8,376	*228,246	*38,731	130,925
All other	97,932,012	96,503,163	41,525,852	41,897,002	17,893,615	16,219,819	38,512,545	38,386,342
Traffic	11,651,869	10,877,569	4,135,039	3,904,439	2,204,203	2,006,690	5,312,627	4,966,440
Transportation—Rail line	252,313,681	240,749,617	109,207,519	105,485,571	42,617,823	38,718,743	100,488,339	96,545,303
Transportation—Water line	414	*4,973					414	*4,973
Miscellaneous operations	9,891,092	9,283,577	3,529,728	3,279,164	1,528,175	1,376,153	4,833,189	4,628,260
General	16,670,224	16,325,148	6,685,741	6,710,838	3,351,371	3,021,995	6,633,112	6,592,315
Railway operating expenses	524,449,672	502,191,518	217,184,458	211,458,032	92,195,357	83,116,499	215,069,857	207,616,987
Net revenue from railway operations	256,222,818	259,802,288	76,594,891	77,348,060	53,103,088	56,026,385	126,524,839	126,427,843
Railway tax accruals	147,214,550	150,727,103	38,971,005	44,708,654	34,224,652	33,725,302	74,018,893	72,293,147
Pay-roll taxes	18,933,406	19,158,994	7,910,684	8,434,162	3,284,344	2,967,037	7,738,378	7,757,795
Federal income taxes†	104,381,121	106,804,141	20,925,879	25,285,111	26,059,391	25,693,876	57,395,851	55,825,154
All other taxes	23,900,023	24,763,968	10,134,442	10,989,381	4,880,917	5,064,389	8,884,664	8,710,198
Railway operating income	109,008,268	109,075,185	37,623,886	32,639,406	18,878,436	22,301,083	52,505,946	54,134,696
Equipment rents—Dr. balance	11,962,629	11,635,390	4,598,125	5,042,577	227,729	203,215	7,136,775	6,389,598
Joint facility rent—Dr. balance	5,466,698	3,260,788	2,117,662	1,534,883	459,359	444,809	2,889,677	1,281,096
Net railway operating income	91,578,941	94,179,007	30,908,099	26,061,946	18,191,348	21,653,059	42,479,494	46,464,002
Ratio of expenses to revenues (per cent)	67.2	65.9	73.9	73.2	63.5	59.7	63.0	62.2

FOR ELEVEN MONTHS ENDED WITH NOVEMBER, 1944 AND 1943

Item	United States		Eastern District		Southern District		Western District	
	1944	1943	1944	1943	1944	1943	1944	1943
Miles of road operated at close of month	228,630	229,106	56,084	56,289	43,373	43,434	129,181	129,383
Revenues:								
Freight	\$6,442,805,275	\$6,210,501,182	\$2,464,482,471	\$2,424,609,326	\$1,221,284,856	\$1,180,140,591	\$2,757,037,948	\$2,605,751,265
Passenger	1,643,893,175	1,501,306,662	665,578,905	606,325,709	322,707,658	304,984,962	655,606,612	589,995,991
Mail	115,842,037	110,686,466	38,871,432	38,281,469	20,989,320	20,126,617	55,981,285	52,278,380
Express	133,258,915	116,767,701	42,992,327	41,046,730	19,680,486	16,436,680	70,586,102	59,284,291
All other operating revenues	344,132,747	333,085,265	148,312,106	144,951,318	48,243,925	43,982,714	147,576,716	144,151,233
Railway operating revenues†	8,679,932,149	8,272,347,276	3,360,237,241	3,255,214,552	1,632,906,245	1,565,671,564	3,686,788,663	3,451,461,160
Expenses:								
Maintenance of way and structures	1,151,062,227	974,157,097	436,758,348	375,904,148	198,444,104	165,674,108	515,859,775	432,578,841
Depreciation	97,692,230	96,625,782	42,511,375	41,507,204	15,991,645	16,235,048	39,189,210	38,883,530
Retirements	17,055,646	5,071,990	5,151,054	1,173,129	2,128,545	753,501	9,776,047	3,145,360
Deferred maintenance	*4,112,431	1,690,709	*431,859	390,813		*78,525	*3,680,572	1,378,421
Amortization of defense projects	17,567,092	9,435,807	5,675,406	3,241,697	3,157,971	1,734,969	8,733,715	4,459,141
Equalization	4,175,568	9,249,684	*1,107,557	1,262,534	3,991,486	4,064,264	1,291,639	3,922,886
All other	1,018,684,122	852,083,125	384,959,929	328,328,771	173,174,457	142,964,851	460,549,736	380,789,503
Maintenance of equipment	1,451,842,847	1,286,248,044	607,257,804	548,201,546	273,446,874	239,161,725	571,138,169	498,884,773
Depreciation	196,736,355	193,188,263	83,159,687	81,918,510	39,373,015	39,412,705	74,203,653	71,857,048
Retirements	*16,894		*4,658		*4,841		*7,395	
Deferred maintenance and major repairs	*1,212,060	1,650,323	15,437	26,668		*62,531	*1,227,497	1,686,186
Amortization of defense projects	154,582,155	119,250,034	51,060,502	41,807,298	39,420,673	28,023,825	64,100,980	49,418,911
Equalization	*35,808	1,251,198	*12,060	834,371	*2,483	183,462	*21,265	233,365
All other	1,101,789,099	970,908,226	473,038,896	423,614,699	194,660,510	171,604,264	434,089,693	375,689,263
Traffic	123,753,862	115,870,540	44,507,871	42,122,642	22,559,270	22,086,294	56,686,721	51,661,604
Transportation—Rail line	2,706,806,690	2,420,925,341	1,198,670,340	1,085,784,572	457,645,486	406,687,121	1,050,490,864	928,453,648
Transportation—Water line	5,494	8,284					5,494	8,284
Miscellaneous operations	108,812,112	95,894,759	38,792,396	34,343,770	17,646,074	15,254,260	52,373,642	46,296,729
General	183,910,748	164,878,918	74,268,026	66,714,937	35,437,852	32,287,840	74,204,870	65,876,141
Railway operating expenses	5,726,193,980	5,057,982,983	2,400,254,785	2,153,071,615	1,005,179,660	881,151,348	2,320,759,535	2,023,760,020
Net revenue from railway operations	2,953,738,169	3,214,364,293	959,982,456	1,102,142,937	627,726,585	684,520,216	1,366,029,128	1,427,701,140
Railway tax accruals	1,732,631,860	1,749,594,542	506,759,096	567,139,438	402,128,240	418,354,590	823,744,524	764,100,514
Pay-roll taxes	211,866,351	188,835,445	89,192,652	81,317,710	36,771,801	32,081,111	85,901,898	75,436,624
Federal income taxes†	1,242,185,053	1,281,724,958	297,117,398	364,271,790	309,937,580	330,759,079	635,130,147	586,694,089
All other taxes	278,580,456	279,034,139	120,449,046	121,499,938	55,418,931	55,514,400	102,712,479	101,969,891
Railway operating income	1,221,106,309	1,464,769,751	453,223,360	535,003,499	225,598,345	266,165,626	542,284,604	663,600,626
Equipment rents—Dr. balance	140,781,224	137,442,286	60,008,802	56,850,734	5,361,570	7,856,815	75,410,852	72,734,737
Joint facility rent—Dr. balance	44,914,815	37,281,116	20,550,419	18,644,987	4,693,878	4,543,902	19,670,518	14,092,227
Net railway operating income	1,035,410,270	1,290,046,349	372,664,139	459,507,778	215,542,897	253,764,909	447,203,234	576,773,662
Ratio of expenses to revenues (per cent)	66.0	61.1	71.4	66.1	61.6	56.3	62.9	58.6

* Decrease, deficit, or other reverse items.

† Includes income tax, surtax, and excess-profits tax.

† Railway operating revenues are after deduction of \$42,026,982 for the eleven months ended with November 1944, and \$28,810,039 for the eleven months ended with November 1943 to create a reserve for land grant deductions in dispute.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

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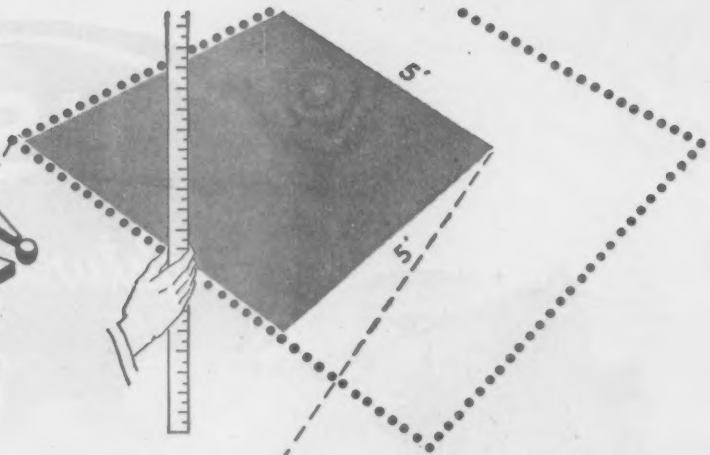
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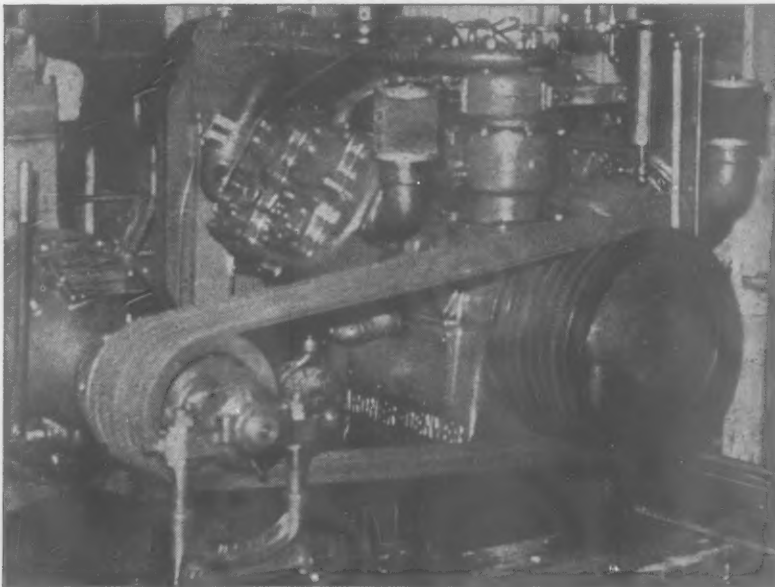
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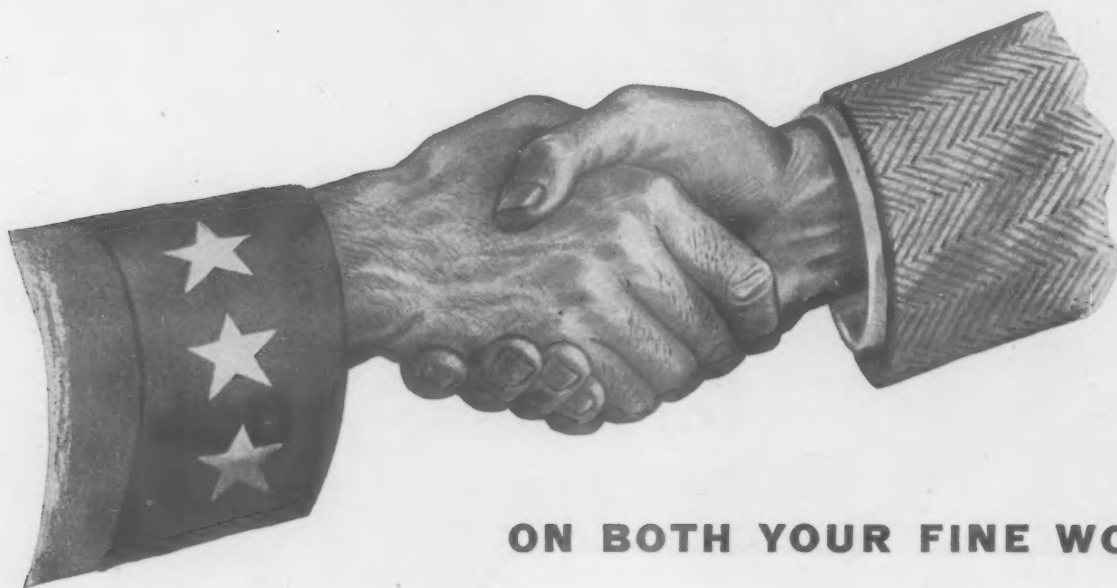
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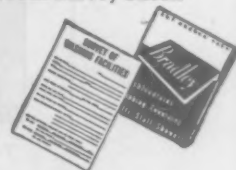
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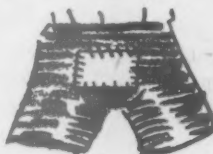


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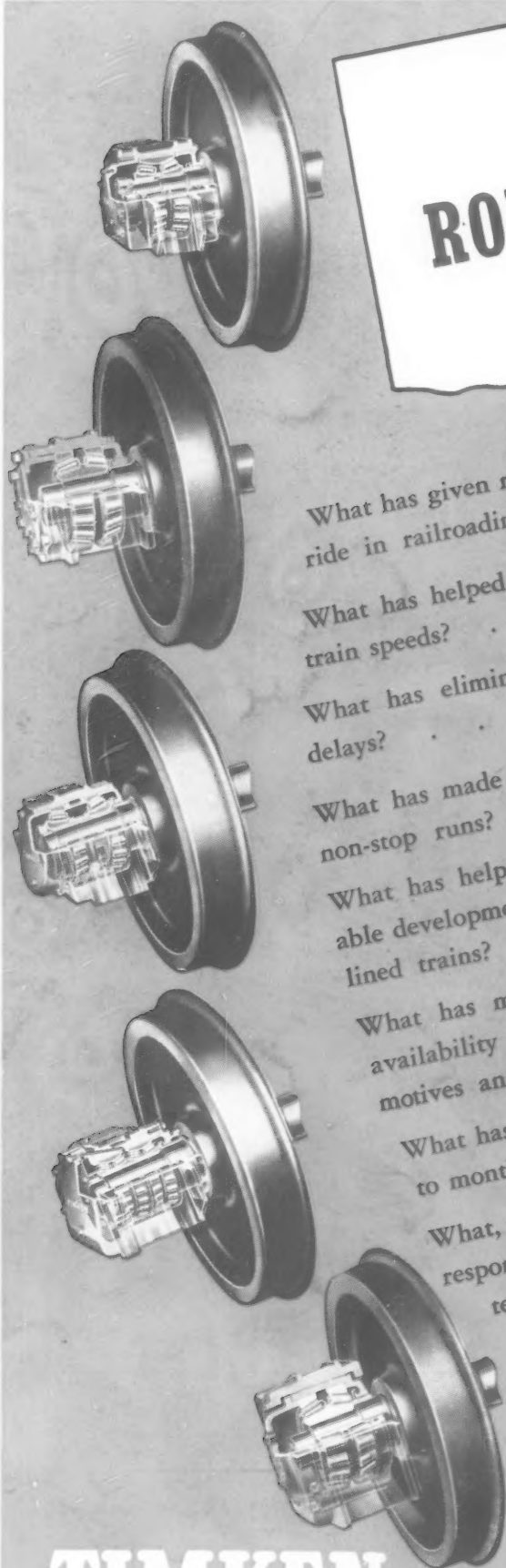
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